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NOTES FROM THE BANNER APIARY.

NO. 81.

DISTANCE APART FOR COMBS.

GEO. A. WRIGHT, in the *A. B. J.*, says: "I notice some are having trouble in trying to get the bees to build worker comb. With me this season it has worked like a charm. I hive my swarms on from five to seven frames; the frames are spaced 1¼ inches from center to center. If they are put further apart than this they are sure to build drone-comb."

Perhaps one reason why I have succeeded so well is because my frames have never been further apart than 1⅜ inches. Putting them thus close will not *always* prevent the building of drone-comb, as I have had one-fifth of the comb built drone comb when the queen was three or more years old. I do not doubt that putting the frames close together *aids* in securing worker-comb.

SHAVINGS FOR SMOKER FUEL.

You mention, Mr. Editor, trying planer shavings *a la* Heddon, in the Clark smoker, and that it was not a success. I wish you would give them a trial in the Bingham—the Doctor. I have both the "Conqueror" and the "Doctor" sizes, and the Doctor works the better. This, filled with shavings, packed down, will smoulder away for hours when not in use—like fire in a bank of sawdust—while a few puffs will bring forth a perfect deluge of smoke. Mr. Heddon tells us how to light the shavings with rotten wood or punk. *I* light it as follows: Put a *small* handful of shavings into the smoker, not all over the bottom, as then the fire is blown *away* from the shavings, and they take fire very slowly; but put them to one side, in such a manner that the bottom is about half covered with shavings. Light a match and carefully set it on end upon the bottom of the smoker, leaning it against the shavings. As the shavings take five, work the bellows *very* slowly and steadily. As the fire increases, slowly incline the smoker in such a manner that the pile of shavings will gradually "fall over upon the fire," so to speak, and cover the bottom of the smoker. When this handful of shavings is nearly burned into cinders, add another handful of shavings; get these well to burning, then fill up the smoker, and it is ready for business. The trouble in lighting is in adding too many shavings at first, thus smothering the fire before there are sufficient shavings afire to hold the fire. When well started, the fire in the "Doctor" has *never* gone out until it burned out, and brother and I have taken solid comfort this season with our "Doctors," and planer shavings for fuel.

By the way, I believe I never told of a visit that I once made to Mr. Bingham. It was during the State Fair two years ago, that Mr. B. whisked me home with him to stay over night. After being shown through his smoker-factory, and witnessing the care, thought, and attention bestowed upon valves, springs, bellows, fastenings, and other *apparently* trivial matters, and then considering the *grand* "direct-draft" principle, I no longer wonder *why* the Bingham smokers are so far superior to all others.

QUEEN-EXCLUDING HONEY-BOARDS.

Tell Dr. Tinker that I *did* see his honey-board at the Michigan State Fair, but did *not* notice how it was made. The first time I thought of putting strips of zinc in grooves cut in the edges of slats was when Mr. Heddon wrote me last winter, saying

that he was going to make some slat honey-boards, and *tack strips of zinc to them*, and he wished for my opinion as to whether to put the zinc under the slats or over them. Quick as a flash came the thought: "Put them in the middle." The spaces between the wooden slats would then be shallower, and less likely to be filled with brace-combs. Before my reply reached Mr. Heddon, it seems that both a student of his and he had conceived of the same idea. Dr. Tinker was, however, the *first* to make public this method of constructing honey-boards; and although others were *original* in discovering the same thing, they have no desire to rob the doctor of the honors that justly belong to him. I have used 20 of these honey-boards this season and I have nothing yet to add to what I have already said. They are *very* satisfactory. By the way, a correspondent suggested to me, some time ago, that he thought the solar wax-extractor would be an excellent place in which to clean honey-boards.

INVERTING HIVES.

I think Mr. Kretchmer is correct in his views in regard to the effect that inverting may have upon queens and queen-cells. I have wondered for some time if inversion did not rob the bees of their *desire* to swarm, and that the *bees* then destroyed the queen-cells.

THAT "EXPLANATION."

I have no desire to again open the discussion of the validity of the "Heddon patent," but *would* like to say a few words in regard to the "explanation" that Mr. Kretchmer was asked to give. When I wrote the article defending Mr. Heddon and his hive, you, Mr. Editor, replied by publishing an article from Mr. Kretchmer in which he unfairly or unwittingly claimed to have invented, used, and patented a hive similar to the Heddon hive. Upon seeing a copy of Mr. K.'s patent, you wrote to him for an *explanation*. Mr. K. seems capable of giving us some valuable ideas; but before again entering these columns, did not common courtesy demand either a retraction, apology, or explanation?

W. Z. HUTCHINSON.

Rogersville, Mich., Aug., 1886.

Friend H., Mr. Kretchmer did promptly send an explanation. The explanation was, however, too lengthy and complicated to be published. It seemed, however, to be reasonable. I forwarded it to friend Heddon, and suggested that we had better let the matter drop. I hope friend K. will excuse me for saying right here, that, several times during the past ten or fifteen years, his explanations have been, to put it mildly, quite unfortunate, to say the least. I published what I did in regard to the effect of inversion on queen-cells, etc., because it seemed to me as if there were a valuable point here that should be investigated.

LETTER FROM NEW SOUTH WALES, AUSTRALIA.

WHAT A WOMAN'S ENERGY AND DETERMINATION WILL DO WHEN HER HEART IS IN THE WORK.

DEAR MR. ROOT:—My brother has sent you a list of things he wants, and has written you one of his short business like letters; but I want to write to you about our friends the bees, and I thought you might like to know a little of their doings in far-off New South Wales.

Would you like to have some of my experiences in bee-keeping? For years I have been a lover of bees; but as the greater part of my life was spent in India, where the bees build their combs like a sponge stuck on a stick, I never succeeded in doing much more than reading and treasuring up every scrap I could get hold of about my little friends. When I first came to the colony, scarcely a bee was to be seen anywhere. "Driven out by the moth" was the universal verdict. Even the bush, or forest, as you would call it, was destitute of bees. About four years ago I bought my first swarm, which, to my grief, I found to be queenless. After this I heard of a man who kept bees in common gin-cases, about four miles away; so one fine bright winter's day away my brother and I started (he came only to please me, for he was not a bee-enthusiast then, but he is now). The old farmer gave us a swarm that had not been robbed since the spring. We were so much afraid to trust our newly acquired treasure to any one else, we resolved to carry it home ourselves, much in the same fashion in which the spies carried home the grapes from Eshcol. Well, to make a big story short, we carried home our box of bees and honey over four miles of as hilly a country as you would wish to see, and did not get home till midnight. It weighed over 70 lbs. It was a grand swarm, and I think we deserved it; but, as usual with beginners, we were in too great a hurry, and lost nearly all by increasing too rapidly.

The next was a bad year; but we got some honey, and our bees did not require feeding in the winter.

Last summer the rain failed us altogther, and what honey was gathered was very thick and dark. I saw some take a prize at a show that was more like treacle [cheap molasses.—ED.] than honey. As our space was very limited this year we did not increase more than we could help. Now we have, after giving away some swarms, ten good strong stocks. You will see by my brother's list that we intend going in very extensively for bees this year. I don't think we shall have any difficulty in selling our honey; but if you could see the honey usually sold here I doubt if you would care to touch it. Bees, brood, pollen, moth, grubs, and all, pitched into a bag and hung out in the sun to strain. Those who put this mixture into a bucket, and stand it in a boiler of hot water, and then strain it through at once are considered as rather advanced bee-keepers.

Mr. Garrett, of late of Glenbrook, and ourselves are anxious to establish, as soon as possible, a central depot for the sale of pure extracted and comb honey, and we thought it would be a good idea to combine apiarian requisites with it. As you have so much experience in these things I thought the best thing we could do would be to ask your advice; and, if you agree with us, to ask you the best way to set about it. Think the matter over, Mr. Root, and let us know what you think. We should like to get the things from America, and we should like particularly to get them from you, as you seem to understand the wants of bee-keepers so thoroughly. Mr. Garrett lent me a lot of your GLEANINGS. I have studied them carefully, and I don't think you will think me presumptuous if I say I feel as if I had found a new friend.

I meant to have told you something about bees in Australia, and I have selfishly taken up all the paper with my own affairs. We have one great

advantage over English and American bee-keepers—our bees require no wintering; an extra mat or a couple of sheets of newspaper under the cover is all we need.

On the 18th of June (the 21st is our mid-winter day) I opened the hives and found eggs and brood in all stages; again on the 12th of July it was the same with this difference—that the brood was all at the top of the frames, and the honey at the bottom. I think we shall have an early spring and good honey season; and if it please God we hope to do well with our bees this year. Bee culture is beginning to excite some interest here; but still there are plenty of people who think we are quite mad to think of making money by bees.

I have come to the end of my paper, so I must bring this to a close by asking you to see that the things are sent as quickly as possible. I am anxious to begin work. We should have sent the month before, with Mr. Garrett's order; but through a misunderstanding it was left behind.

SOPHIE A. BRADLEY.

Campbelltown, N. S. W., July 13, 1886.

My good friend, your description of your first start brought vividly to my mind my experience with my first swarm. It was carried home on a pole between two of us, exactly as you describe; and as it was a hot autumn day the sweat dripped from our faces before we got the hive to its destination; namely, the upper floor of the woodshed. You say you carried your hive four miles, but I believe we carried ours only about one mile.—I should be very glad indeed to give you some practical suggestions in regard to starting a supply-house, but I know too little of your circumstances and surroundings. I would suggest, however, that you invest cautiously, and bend all your energies toward making the bees themselves open a way for a brisk trade. Nothing ever helped me so much to establish a business as pouring tons of honey on to the market, the product of our own apiary. Articles written for your local papers, answering questions and explaining improved bee culture, will greatly help you.—Many thanks for your very kind and encouraging words. It gives me a thrill of pleasure to know that I have made friends, even in far-off lands, by what I have written about bees. May God bless and prosper you in your undertaking, for I am sure it is one that is pleasing in his sight. Perhaps I should explain to our readers that the above letter was accompanied by an order for over $200 worth of supplies.

CAN A QUEEN LAY 3000 EGGS PER DAY?

A. W. OSBURN'S OPINION ON THE SUBJECT.

HOW many bee-keepers are willing to be put on record as saying that it is their candid opinion that they ever owned a queen that laid 3000 eggs a day? For one I am not willing to be put on record as saying any such thing. While for the last ten years I have kept bees in a warm climate, and where it is reasonable to expect the queens to lay as fast as in colder climates, yet I am not going to say that I ever thought that any one queen laid for me 3000 eggs in 24 hours. Let's figure a little: Suppose the queen has got to lay 3000 eggs in 24 hours, how long will that allow her for each egg? According to my figuring she will have 28.8 seconds for each egg; that is, supposing she does not lose any time, which is a wrong supposition; for the time lost in examining cells that have already been laid in, and in traveling over the comb, will reduce the aggregate of her day's work fully one-third (that is, if she is expected to lay 3000 eggs in one day. You or any other bee-keeper can satisfy your minds upon this subject by watching any good prolific queen while she is laying. Hold your watch and see how many eggs she deposits in one minute. I have known them to deposit three in one minute, and then go three minutes and not deposit any; but when there is nothing to disturb them, and the comb is free from pollen, about two eggs a minute is their speed, *while they keep at it;* but they do not keep at it all the time; they stop and have a friendly chat with some worker, or perhaps take a little refreshment, as they go from one comb to another, for no queen fills the full side, or two sides of a comb, before she goes off from it; but the time is going on; and when the 24 hours roll round, if she has deposited 2000 eggs she has, in all probability, done about the best she could.

Now, it will not be out of place here to say some things for the benefit of beginners about the habits of queens while laying (I am speaking now of full colonies that have from 8 to 10 frames). It is supposed by many *beginners*, that, when they put an empty comb in the brood-nest, the queen is going to fill that comb the first thing she does, and that, too, without leaving it. Nothing can be further from the fact, as experience shows. The queen goes from one side of her brood-chamber to the other every 24 hours, or nearly that, examining every comb that has brood in, to fill all cells where bees have been hatched; and if the empty comb comes in her way she puts in it what eggs she has time to, but never to the neglect of the combs where young bees are hatching constantly; for it has always seemed to me that, if there were any one thing that a queen delights in doing more than another, it is to lay in cells that bees have just come out of.

A. W. OSBURN.

Havana, Cuba, W. I., Aug. 2, 1886.

Why, friend O., it is not a matter of opinion, but simply a question of figures. From our observations here, a queen will fill one side of an L. frame, and sometimes a part of the other side, in 24 hours. What we mean by "fill" is two-thirds or three-fourths of one side. As queens fill a frame somewhat in the form of a circle, there is generally not over three-fourths of the cells with an egg in. The number of eggs can now be very easily determined by calculating the number of cells to the frame. It is commonly estimated that there are about 25 worker-cells to the square inch. This number per inch would be correct if the cells were square; but as they are hexagonal in form, Cheshire has shown that there are nearly 29 cells to the inch. Taking 28 cells as the basis, we find that, in round numbers, there are about 4000 cells to one side of an L. frame. On the supposition that a queen can fill three-fourths of this number, 3000 as the total number of eggs laid by a queen in a day is about correct. You say you have

seen queens lay three eggs a minute; and yet if she lays two a minute, at this rate she will lay very close on to 3000 eggs in 24 hours. You say that she does not keep this rate up. Opening the hive and exposing the queen and frame to the light is apt to break up the normal condition of affairs. Were the hive closed, a good fertile queen on a frame of foundation nearly drawn out ought to be able to fill the frame nearly full in a day; at least, we have had queens do it repeatedly. Bear in mind, that we are talking about what queens *can* lay, not the daily average number per day.

UNFINISHED SECTIONS, ETC.

WHAT TO DO WITH THEM.

IN response to Bro. Stewart, on page 654, I will say that there are two ways to handle unfinished sections of honey. They may be finished by feeding back extracted honey; but most or all who have tried this plan have abandoned it. Our method has been as follows: All combs that are not sufficiently filled and sealed to make a fine appearance on the market, we place in a frame (six at a time), and after uncapping the part that is sealed we sling out the honey which is particularly clean, and place them in storing-cases, to be placed on the hives during the most excessive flow of the following season, when the bees can not build comb fast enough to hold the nectar they can easily gather.

Now about the "bulging" of the combs in these replaced sections. We have suffered this inconvenience, and know the cause and prevention. When you are re-casing the sections of combs, combs of various stages of development, never put thin and thick combs next to each other; neither put the fuller side of one section next to the shallower side of another. Put full sides together, and shallow sides together, and only such sections in any one row as are about equal in comb growth. This is the way we handled the few bulged sections that were left unfinished. With these precautions, bulging is made straighter, rather than crooked, the second year.

We have never had any trouble with pollen getting into the sections because of "contracting," and we have practiced it five years, and are quite sure that we shall continue its practice as long as we produce surplus honey. We are sure we have abundance of pollen here. No, we have never noticed that "reversing" combs tended to the depositing of bee-bread in the sections. During the past three years we have had in use from a few to as many as 6000 reversible frames, and have never yet been able to discover any objection to them, but many advantages instead. We never expect to use other than invertible combs.

We have never yet had a cell of brood "chill" when practicing our method of preventing *after*-swarms, and can not see how any can become chilled if my directions are followed.

Now, friend Root, I consider it my *duty* to offer a public protest against the article in last issue, pages 651-'2, signed E. Kretchmer, wherein he again lays claim to one of the prominent functions of my new hive, patented last Sept.; viz., the use of a brood-chamber divided in two horizontal parts. You will recollect, that, on page 211, Mr. K. claimed to have a patent, No. 67,123, that antedated my invention, and that copies of that patent showed that claim to be untrue, as not a single function of my hive was therein shown. I claim this and the use of half-bee-spaces as prominent parts and parcels of my invention, and hereby respectfully ask all brother bee-keepers to respect my rights in them.

Dowagiac, Mich., Aug., 1886. JAMES HEDDON.

Friend H., our answer to friend Hutchinson covers partly what you say in your last paragraph. We published friend K.'s article because it seemed to suggest or call attention to something of value. Very likely it would have been better to omit the last paragraph of friend K.'s article to which you allude. I do not believe it is best to discuss the question of rights again on these pages.

THE WAX QUESTION, AGAIN.

ARE THERE ANY MISSING LINKS IN HASTY'S EXPERIMENTS, AS RECORDED ON P. 641?

I WAS very much interested in reading friend Hasty's article on the wax question, but it still seems to me that there are some "missing links" in the really wonderful chain of evidence and experiments that he has constructed.

In the first place, how did he ascertain that the swarm, when first hived, had no wax secreted? He says that he thinks they did not have any. Bee-keepers have generally supposed that a colony before swarming always begins secreting or forming wax, or, at least, that a swarm after issuing is provided with quantities of wax scales. If this be true, then how can friend H. estimate the amount of nectar used to form *this* wax? and, also, what proportion of the wax stored during the days of testing was already secreted when the swarm was hived?

Again, on account of the bees being in a wax-secreting condition (allow me to use such a phrase), would they be obliged to draw as heavily upon the nectar already stored, for this secretion, as would an older swarm, just beginning to form comb, as in working in section boxes? He writes, that a colony rearing brood will consume about seven ounces only, during a night. If this is the case, what becomes of the large amount of honey that a swarm of bees contains when the bees leave the parent hive? We all know that the bees gorge themselves before swarming, and I have hived such swarms (which I should judge had fully 2 lbs. of honey in their sacks) after they had been clustered about an hour, and then they did not have much if any honey, and they took nearly 2 lbs. of honey from a feeder, immediately after I had hived them, and this before they had any combs built in which to store this feed. Now, what had become of their first load? They could not have eaten it all simply to satisfy hunger. I have seen bees from new swarms return from the fields with a load of honey, and also with wax scales adhering to them. Who can say but that this wax was secreted while the bees were at work in the fields? and how can we get at the amount of nectar required to form it? It seems to me, that, in order to get *exactly* at this question, as Mr. Hasty would desire, we have got to pursue a different line of investigation, and have *all* points tally more correctly than they seem to in his article.

I would not have you think that I write thus simply for argument's sake; but I believe in this: "If you don't talk you won't say any thing;" and I would say, "If you don't read or write in bee-journals you won't learn much about any thing"—at least, in this line. CHAS. H. SMITH.

Pittsfield, Mass., Aug., 1886.

Friend S., your suggestion, that the bees consume honey while in the fields, for storing wax, is an important one. I do not now remember that I ever saw wax scales on a bee while at work in the fields; but perhaps it is because I was never on the watch for them. I confess I do not see how we can get at the matter with much accuracy while the bees are allowed to fly; and it may also be true that we can not get much accuracy where they are *not* allowed to fly. If so, how shall we decide on this important question?

SALT FOR BEES.

FOSTER'S OPEN-SIDE SECTION.

ON page 502 are two references to my article on salt for bees, as given on page 178. In reply to the first I will say that I have heard that stock that graze near tide-water do not need salt as do those that graze further inland; and if so, it may be the same with bees.

In regard to the second, I can say that, while I have not seen bees "shoulder a lump of salt," I have seen them sucking the damp earth just below a deposit of salt on the points and edges of earth, as referred to in my article on page 178. This, I think, proves *almost* conclusively that it is a strong solution of salt they are after.

SECTIONS OPEN ON ALL SIDES.

I was very much interested in the Book Review, wherein was mentioned Foster's open-side sections (see page 483). Ever since I became acquainted with the open-end section I have felt that it was "the thing;" but in practice I met with difficulties. It seemed to be intended to be used without separators, and, in consequence, with sections both wide and narrow, I had bulged comb, so I have attempted to devise a separator that could be used with open-end sections, and here it is.

TIN SEPARATOR, EXPRESSLY FOR USE IN SECTIONS WITH OPENINGS ALL ROUND.

The slots are intended to match with the edges of the sections, and will enable the bees to have the same free communication that they would have without them. I think the slots in the separators should be about ¾ inch wide, and in the sections somewhat narrower than you make them. Further, I would not fasten the separators to the wide frames, but hang them from the top-bar; then, by detaching them, the bees can be brushed from both sides of the sections instantly. W. H. GREER.

Paris, Tenn., July 19, 1886.

The separator figure above has been many times suggested, and the same, or something quite similar, is in use by different parties. The principal objection is the expense of manufacturing such a separator.

DESTRUCTION OF QUEEN-CELLS BY INVERTING THE BROOD-COMBS.

FRIEND SHUCK GIVES US SOME ADDITIONAL FACTS IN REGARD TO THE MATTER.

SO far as I know, my statement of the fact as to the destruction of queen-cells from their inversion was the first made. I have found, in not less than 150 trials, that the cell, if so far built as to turn downward, will be torn down and destroyed by the bees, if inverted at that time. Also, it will be thus destroyed if inverted at any time from the turning downward of the cell to the final sealing of the same. If inverted after sealing, to within two or three days that the queen is due, the cell shrivels up, sinks into itself, as it were, and is treated precisely as a cell from which the queen has failed to emerge; that is, sometimes it is torn down and sometimes is allowed to remain. In this latter case the young queen seems to have been destroyed by inversion: in the former cases it would seem that the cells and larvæ are destroyed by the bees because they have been inverted. I have found no practical use for the discovery.

It has been suggested, that, when a colony swarms, the parent hive might be inverted, and a new queen run in. This plan would succeed in a majority of cases; but should queen-cells be destroyed in this wholesale way? I think not. Rather save the queen-cells in some suitable way, and then introduce the queen.

Mr. Kretchmer's statement (see p. 651) as to "horizontal" queen-cells is hardly to the point. Such a cell can be inverted only by turning the comb upon its side. None of us are yet reckless enough to try this experiment. Our friend speaks truly when he says, that "many other profitable manipulations can be accomplished without inverting, and that is *alternating*." So can they with invertible frames; but the consumption of time is against the two latter, and in favor of the former. A hive can be inverted in less time than two chambers can be alternated, or the frames handled separately.

Mr. Pond pays his respects to inversion, but doesn't tell *all* the truth. Inversion does place the brood above the stored honey in the brood-nest, and the honey there stored will be carried into the sections (if they are in place); but this is not all. The space thus cleared will be occupied by the queen, and more laborers for the harvest are thus secured; and the *habit* of carrying the honey to the sections is thus established; and if the *habit* is not interfered with by swarming or queenlessness, it will be likely to continue till frost stops the work.

SHAVING THE COMBS TO ⅞ IN. TO MAKE BEES STORE HONEY ABOVE, A LA POND.

The thin combs so justly praised by Mr. Pond (page 529) are not infallible; and whatever of value attaches to them is perfectly adapted to the invertible system. In fact, I use nine frames during the white-honey harvest in an eight-frame hive, but I remove one frame for the fall harvest so that the combs may be bulged to repletion for winter stores.

The invertible hive and all its appurtenances are as cheap as any non-invertible hive of the same class of material and workmanship, and the time required to manipulate the invertible for the production of honey is not one-fourth the time required for a non-invertible hive. There is the gage, come who may. J. M. SHUCK.

Des Moines, Iowa, Aug., 1886.

A DEFENSE OF THE BLACK BEE.

A REPORT THAT WILL DO CREDIT TO ANY RACE OF BEES.

SEEING Mr. Doolittle's article, in Aug. 15th GLEANINGS, "On the Different Races of Bees," I feel I can not let it pass, especially that part of it which has reference to the black, or brown bee, without standing up and speaking in its defense. What he says about it as a poor honey-gatherer is not true in my experience. I have kept bees for the past 8 years, and have had nothing but blacks, and my returns compare favorably with those of my brother bee-keepers who have Italians. To prove what I say, I will give you some of my experience.

Three years ago was a good honey season in Canada. I had 30 colonies in the spring; 5 were weak and 25 were good. I got 4500 lbs. of honey, of which 1200 lbs. was comb; increased to 80, and the colonies averaged 25 lbs. each for wintering. Is that "from hand to mouth," or "calculating a day or so in advance"? Now for two poor seasons, especially this year: I began with 130; increased to 220; got 7000 lbs. of honey, of which 2400 is comb honey, and they all average 25 lbs. per colony for winter. Is that "from hand to mouth"? Last year was very much like this, when we got about the same per colony. Those of my acquaintances who have Italians get no more per colony than I do. As for the wax-moth, I have never lost a colony from that cause yet, and surely they must resist it, or they would all have been destroyed; and as to their being cross, I find no trouble in handling them. Now, I say that both Italians and blacks have good qualities. It hurts me to hear the bee run down, that has proved such a friend to me. I also see that Mr. Root agrees in every particular with what Mr. D. says. Now, Mr. R., can you say from actual experience that what Mr. D. says about the blacks is true as honey-gatherers?

WM. COLEMAN.

Devizes, Ont., Can., Aug. 26, 1886.

Friend C., I am very glad to hear your good report with common bees; but if you will excuse me, it seems to me it does not strike the point after all. You say you had nothing but blacks; therefore, how do you know that Italians in your hands would not have done a good deal better, even, than the report you give? It is true, you say your neighbors have done no better with Italians; but I suspect that, if your neighbors had only blacks, like yours, they would not have done nearly as well as they have done. I presume you know it is a common thing for one bee-keeper to get good yields of honey every season, while his neighbors around him do little or nothing. It is in the man as well as in the bees. The comparative difference between the Italians and the common bees has been settled for years, with such overwhelming results in favor of the Italians that I hardly think it worth while to open it again. We are glad of your report, however; but I would put it something this way: "Mr. William Coleman, of Devizes, Ontario, Canada, has obtained 7000 lbs. of honey, and increased from 130 to 220 during the past year, and that, too, with only common black bees." I hardly think you will call me prejudiced, because this matter has been discussed over and over for many years.

HOW TO UNITE,

AND MAKE THE BEES STAY IN THEIR NEW LOCATION.

I HAVE just received a card from W. H. Ritter, of North Springfield, Mo., in which he wishes to know how I unite my bees without having trouble; and as it might be of interest to many of your readers I will give you my plan—one that has never failed with me so far, though I can't tell how soon it may. In the first place, I never unite except when they are light, both in bees and honey.

A little before sunset, when the weather is good, I take my smoker and go to the colonies I wish to unite; and by a vigorous smoking and jarring of the hive I cause them to fill themselves with honey. This takes only a few minutes. I then simply pick up the hives and carry them near the hive where I wish them all to remain, open them all up, and, if necessary, give them another dose of smoke; then I shake bees of the colony that stands in the place where I wish the united colony to stand, all or nearly all off the combs in front of their hive, setting their combs in an empty hive close at hand, replacing them with combs from the other colonies, after the bees have been shaken off in front of the same hive. In this way I get the bees thoroughly mixed, so they are all strangers to one another, and I sometimes alternate combs from different hives; but it is not essential—at least, I have not found it so.

Now you will ask me, "How do you get them to stay on the strange stand?" Well, I keep a lookout for a while after uniting (the same evening and next morning); and if any considerable number of bees go back to their old stand I let them buzz around until they get thoroughly frightened at the loss of their home, then I pick up the united colony and carry it around to the place where they formerly stood, and in five minutes I can pick up all the stray bees, then carry the hive back where it belongs, and hardly a bee will go back to his old stand, provided the hives are all taken away so they can not see them. To be successful with the above plan, all the hives should be of one color, and as much alike as possible. By the above plan I united 39 colonies back to 24 in my own yard; and in another yard, about 12 miles from here, belonging to a lady friend, I doubled back from 17 to 7 in the middle of the day, and never stayed an hour to look after them, and she writes me that hardly a bee went back. The proof of the pudding is in the eating; and in this case it has proved excellent. It may be well for me to state, that all the above was done during a dearth of honey, when bees are inclined to be more quarrelsome than at any other time.

M. BROERS.

Gonzales, Texas, Aug. 23, 1886.

Friend B., your plan of uniting colonies and making the bees stay in their new location is very similar to the one we practice here at the Home of the Honey-Bees. Of course, we think *our* way is a little simpler, but the principle underlying both is the same. I have no doubt your plan will work, judging from our own experience. I would add, however, that I think you will find a marked difference in different colonies. While some will adhere to the hive in its new location, without very much trouble, the bees from another colony will persist in going back just as many times as you restore them to their combs and queen.

THE FIRM OF JANE MEEK & BROTHER.

A Serial Story in Ten Chapters.

BY REV. W. D. RALSTON.

CHAPTER IX.

THE DILIGENT REWARDED.

WHEN old winter began his icy reign, the bees were placed in the cellar. As they were increasing in numbers, it each year became more and more of a task to place them there. This fall Tommy constructed a hand-barrow on which he and Jane placed the hives and carried them into the cellar. During that winter, nothing occurred worthy of notice. Jane and Tommy were in school; and their studies, with the sports and excitements of the playground, almost drove all idea of bee-keeping out of their minds for the time.

Mr. Shaw, the grocer, who had purchased their honey, placed it in a position to be seen by all his customers; and if any inquired about it he was careful to explain that he had purchased it from a little boy and girl who had raised it. Much inquiry was made about how it was secured in such frames, and all so nicely filled. He could only refer them to Mr. Meek for this information. Several persons met Mr. Meek in the town, and asked questions about bee-keeping, and the kind of hives to use; while others came out to his house to see his hives and fixtures. If the children were at school, Mr. Meek took pleasure in showing them these, and explaining their uses; in fact, it usually amounted to quite a lesson in bee culture.

Good Mr. Brown was frequently a caller at Mr. Meek's, for they were warm friends. Frequently he asked the children how they liked keeping bees, or how they were succeeding, and heard their report. One day he said to Mr. Meek, "I am almost sorry I gave that hive to the children, for you are wasting so much money on bee-fixtures. I have kept bees for fifteen years, and I assure you it does not pay."

Mr. Meek began to discourse on the improvements which have been made in bee culture, when Mr. Brown shook his head, saying, "I want to hear none of your new-fangled notions. These so-called improvements are the inventions of *gouges* who are after people's money. I am truly sorry to see you waste your money on such fixtures."

One day in the fall, soon after the children had sold their honey, he came in, and, with a queer expression on his face, asked, "Did your children sell Mr. Shaw that pile of honey he has in his store?"

"Yes," replied Mr. Meek; "and besides, they gave us over seventy pounds to use here at home."

"Well, now," said Mr. Brown, "that does beat all! Last spring I stuck an empty fish-kit on one of my hives, and the bees filled it with nice honey. As I had enough without it, I took it to Mr. Shaw's store. He refused to buy it—would not even look at it, and showed me what a pile of honey he had on hand, and said he got it all from your children. He said he would never sell any more honey, unless in little boxes like those in which your children had it. I looked at some, and found them the nicest combs of honey I ever saw, and could be handled so nicely without waste. I took my honey to another store, and could not sell it there. I then took it to another, where I was offered nine cents a pound in trade, which I took, and even they did not buy it very willingly. Now, you know I always have opposed you when you wanted to present new ideas about bee-keeping; but what I saw in the store, of the result of improvements, makes me think otherwise. If you have time to spare, I do not mind to take a look at some of your fixtures, and see what you have to say about them."

As they did so, Mr. Brown would rub his hands, and exclaim, "Well, well, well! that does beat all! I never thought bees were such curious creatures, or that they could be worked with in such a way. I wish I had learned about them when I was young. I guess I shan't begin now. But I tell you what I will do. My youngest children have caught this bee-fever from yours, and talk so much about bees that I will give them mine on certain conditions, and let them make their best of them. I hope they may succeed as well as yours have done."

At length spring came; but the weather was so unsettled that the bees in the cellar were not disturbed until late. One day, all things indicating pleasant weather, the children carried their hand-barrow to the cellar, and, closing the entrance of a hive, placed it on the barrow and carried it out to the yard. After placing it on its summer stand and opening the entrance, they were much surprised at seeing not a single bee making its appearance. On opening the hive they found not a living bee in it. They were terror-stricken. What if all their colonies were dead? They hastened to bring out another; but as soon as its entrance was opened the bees poured forth. It was so with the other seven. Mr. Meek examined the dead colony, and said the cause of its death was the loss of the queen and their failure to raise another. They had an abundance of nicely sealed honey. They took these combs and exchanged them for empty combs in light hives. They prepared two colonies for extracted honey, and six for comb. The extra combs obtained from the colony that died were divided between the two upper stories intended for extracting. To preserve these combs from the moth, they placed on these upper stories containing them, in the time of fruit-blossoms. They had sections also ready to put on the hives as soon as the white clover opened. When they put these on they also looked into the upper stories of the extracting-hives, and were gratified at seeing them full of bees, and were satisfied that work in those upper stories had already been begun. Tommy, by the advice of his father, prepared two upper stories, similar to the others; and when those were well filled, Mr. Meek helped to raise them and place on the empty ones, placing the full ones on top. As the frames in these empty ones were provided with wide strips of foundation, the bees were not long in drawing these out and completely filling the frames with comb. When the upper sets of frames were completely capped they were taken out, carried into the house, uncapped, and extracted. Mr. Meek then raised the next story while the children slipped under it the other story filled with the freshly extracted combs.

The two hives from which they extracted were early strong in bees; and as they did not swarm, the yield from them was 368 lbs. They made all needful preparation, and also kept all as busy as they could. The yield from white clover was not

so good as on the previous year; but they had a good yield from fall flowers, which made the year a better one for bee-keepers than the preceding one. Two of the colonies were so busy gathering honey they did not swarm at all. Two others swarmed only once, and one swarm went to the woods. So at the close of the season they had only five of an increase, making their colonies number thirteen.

One day, near the close of the yield from white clover, they, with the help of their father, removed the sections from the hives prepared for comb honey, and, taking out the two outside combs, extracted the honey from them and returned them, that the bees might fill them with honey from fall flowers, which is usually of an inferior quality, and not so ready sale, but does for winter stores. From these they obtained enough to make their crop of extracted honey weigh 500 lbs. Extracting those outside combs doubtless made the yield of comb honey less than it would have been. Their yield of comb honey was only 550 lbs.

Although nothing has been said about stings since Tommy received his first one, you are not to suppose they worked all this time and escaped without receiving another. They had received so many that a sting or two were generally expected when they had much work to do in the apiary. In fact, a dread of being stung often kept them from doing needed work, until their father urged them to it. Tommy took many a dance in consequence of some cross bee touching him on a tender spot; and Jane had often run from the apiary with a bee in her bonnet, calling upon her mother to help remove it. One evening she received a sting on her nose, between the eyes. The next morning, when her mother entered her room to call her, she could hardly believe that the girl she found in the bed was her own little Jane. Both eyes were closed by the swelling, and she looked like an entirely different person. Her appearance at the breakfast-table was greeted with a hearty laugh from both Tommy and her father; but now the stings had ceased to produce swelling as formerly.

The day they took out and extracted the outside combs from the lower stories was a rather unfortunate day for Tommy. The bees seemed very cross, and to have a spite at him; but he received sting after sting. At dinner he said, "I wish bees had no stings!"

His father replied, "Bees have very precious stores to guard, and require arms to guard and protect them. They have an army of lancers who stand guard over these stores. If let alone, bees are harmless; but when we try to rob them of their stores, this army of lancers charge on us. If they did not thus guard their stores, all animals that have a sweet tooth, and men and boys, would feed upon the products of their labor, and they could have no heart to work and gather stores. It is the fact that bees have stings, and use them, which makes it pay to keep bees. If they had no sting, so many would keep them that honey would bring almost nothing in the market. As it is, skill is required to handle bees and not be injured by their stings. Few acquire this skill. Patience is also required, and few attain that patience. Hence bee-keeping becomes a business, and can be engaged in by the skillful and patient as a means of livelihood.

Concluded next month.

APICULTURE A SUITABLE AVOCATION FOR WOMAN.

A RECREATION AND RELIEF FROM HER DAILY ROUTINE.

ALL persons are not born bee-keepers, or even made bee-keepers by years of experience, and it would be but folly to expect that *all* would be successful in that branch of industry. And, indeed, there is often more profit in bee-keeping as a recreation than in all the many returns that are realized, although there is sometimes a consideration in *that* respect.

When the weary rounds of business have become so monotonous that the heart at times sickens at it all, it is then a real relief to turn away from all these things and watch that "band of united workers who never strike" nor complain, moving so systematically along in their ceaseless toil. There is a practical lesson to be learned in watching these uncomplaining little workers. We who so often grow weary of our toil; who so often complain that our labor brings in no returns, can learn some valuable hints from the busy bee that expects no returns save a bare subsistence.

For the overworked, and those whose occupation consists of one changeless round of drudgery, we can not too earnestly recommend this employment. It has been argued by some, that woman is not physically fitted for this business; and by others, that it is unladylike. To such weakness as would prompt the latter thought we have no reply—nothing but a contemptuous pity! That woman is not strong enough for the more laborious part of bee-keeping as well as for many other things which come within the routine of domestic life, is only too true; but is there not for women, and especially on the farm, other back-breaking weights that have far less sweetness in them than honey-boxes? Most farmers' wives have no Irish or negro help to lift their wash-tubs, churn the butter, or do the various other hard jobs that are daily to be encountered.

It has been estimated that a large per cent of the insane entombed in the asylums are *farmers' wives*. Why is this? Simply because there is too much sameness—too little recreation in their lives of toil. Their work brings no remuneration; and woman, as well as man, is only human, and would like some little individual income or possession; and so, sooner or later, the oft-recurring duties become tasks, and life is, at length, reduced to the sphere of slavery.

This recreation among the bees is not at all needed where women are musicians, and can while away an hour or so each day on the latest sheets of music at the piano; or where she is educated to sketch, or paint on silk or velvet—painting the bee or butterfly on some household ornament; but really half the women on farms would feel guilty of some misdemeanor if seen at such employment—so thoroughly have they been taught to know nothing but *real work!*

Then, for mercy's sake, do not try to set up a "scarecrow" over bee-keeping, silk culture, or any other occupation that will be at all remunerative, and tend to lead the mind away from these unchanging household duties—duties that are all right and proper that every women should perform, but nevertheless need to be at intervals sweetened by change. There is nothing dishonorable in any honest employment. It will do to tolerate such senti-

ments under a monarchical form of government, where an idiot may be born an aristocrat; but we have only self-made aristocracy, and the canal-boy or rail-maker can reach the highest seat under our government, as well as the great. But we would advocate opening up all avenues to woman as well as to man; that is, all that are retired and not calculated to degrade her, which, if she has a love for it, we feel that bee-keeping could never do. Unless there is a real fancy for this business it is a mistaken calling; for bee-keeping, like every thing else, must be entered into with the whole heart to prove a success. But from practical experience, and not from theory, we can say that the sixty colonies which claim our daily individual attention are a real recreation. It leads the mind away from the humdrum cares of life into the study of nature, where its broad fields are spread out before us, rising to the sublimity of its heights as far as the weak human intellect can go as we watch the all-unconscious bee go forth in its ceaseless toil.

If all laborious work is to be taken away from woman because it is unladylike, let it then commence where the general health is most affected, and the mind least diverted, that the sphere of domestic life in general may be more bright and cheerful. A WOMAN.

Greenville, Ill.

PATENT DRONE-BROOD EXTRACTOR.

CHICKEN SHORTCAKE.

WHENEVER we had a lot of drones we used to destroy them with puffball, as some call it, which can be put in the smoker, the drones meantime having been set in a tight box. A few puffs will make them senseless, when they can be taken out and given to the chickens, which will consume all of them before they can fly again. The reason why we did not sulphur them is, that the chickens don't seem to like them so well, nor do I think that they are so beneficial to them when dead.

When I was a boy, and had but a few hives, I would often kill most of the drones of a hive when I knew they were driven down to the bottom-board, which the bees do when pasture gets scarce, or after a young queen is mated. I lifted the hive and put them through the above process. But the best chicken-feed consists of drone-brood from about 15 days old to mature; and what excellent drone-brood extractors chickens are! I found out accidentally, several years ago, when I had my bees several miles from the city, as usual, when late one day I had transferred a few box hives. By packing up, in a rush for the home train, I had left a large piece of well-capped drone-comb on the ground, which I found, when I came back the next day; but to my surprise I found the brood on the upper side was all taken carefully out. As I had noticed chickens around there, it struck me that nothing else could have likely taken it. I turned the comb up the other side, and soon had the chicks to extract it. As we had a lot of chickens this year, and plenty of box hives to transfer, I had plenty of what we call now "chicken shortcake," for which all the drone-brood was used. As I ran short of hives for want of time, I inverted all my remaining box hives, cut out all the drone-comb, before it could hatch, with my hoe-shaped instrument.

Now, friend Root, I know that you have not much sympathy with patents or patent men; but as it seems to be fashionable to call every thing an invention, I leave it with you to decide who is the one entitled to the patent—the chicken or myself, for extracting drone-brood.

C. H. LUTTGENS.

Hammonton, N. J., July, 1886.

Friend L., no doubt your suggestion is a valuable one. I presume you use chickens of just the right age, for I could imagine that large fowls might tear the combs badly. I should think the food would be very stimulating to the chickens; but is it not rather expensive? Would it not be better to prevent the rearing of drone-brood by removing all the drone-comb?

KITCHEN CONVENIENCES.

FRIEND TERRY GIVES US SOME USEFUL SUGGESTIONS IN THE MATTER.

FRIEND ROOT:—Now about those improvements indoors. We will take the kitchen first. Here the farmer's wife and daughters spend a large part of their time. The interests of humanity demand that the air in this room be at all times as pure as possible. The farmer who works out in the open air is healthy and robust, as a rule. Now, the kitchen should be as near an approach to open air as it conveniently can be. A tent would be about perfection, for summer; something to keep the rain and sun off during the heat of the day, while allowing a perfectly free circulation of air at all times. Practically, about the best we can do is to have the kitchen in a wing by itself, with outside doors and windows on at least two sides. Then over these doors and windows on each side I would build a large porch. This allows almost as free a circulation of air during the summer as a tent would, and the women-folks have one chance at least for as good robust health as the men have. The windows should have pulleys and weights so the upper sash can be let down or the under one raised very easily for ventilation during cold weather, no matter if it takes a little more fuel. What is a little wood or coal by the side of good health? A physician in the Northwest tells me that, to save coal, which is quite valuable there, many make their houses very tight, and never ventilate any more than they can help, and the result is often a breaking out of typhoid fever, from breathing such filthy, impure air.

It has often amused me to see people who were extremely neat and clean in every other particular so extremely filthy in the matter of ventilation. It is a serious matter; but it is so inconsistent to work so hard to have those pans and dishes and clothes so perfectly free from a trace of dirt or filth while one is breathing the filthiest kind of air. Every breath from our lungs is defiling the air, as are also the emanations from the pots and kettles. The neat housekeeper is constantly washing her hands, when they become soiled in the least; why not wash the air, when it becomes almost sickening from the impurities in it? It is far more important that you should. Dirty hands would only offend the taste, while dirty air is seriously injurious to health. Let the outdoor worker, when he comes into his wife's kitchen, and can "scarcely

breathe," fix it immediately so that she may have as pure air as he does to work in, and get his reward in her better health and longer life. Certainly the poorest can afford so cheap a luxury.

Of course, every man will have a pump in the kitchen, and dry wood or coal in the woodshed, where it can be got at handily. I do not need to speak of such matters. Also he will see that there are screens in all the doors and windows, so the good wife may not be annoyed by flies while she is busy with her work. These are almost as cheap as pure air now.

Then if he is like the writer he will have a slop-barrel on wheels standing by the west porch (in the shade) in the morning, and by the east one in the afternoon, so the ladies can dispose of the waste water with the least possible trouble, and with no danger to the purity of their surroundings.

One more point, not to be overlooked: The kitchen is a hot place when the thermometer is in the nineties, and a large cook-stove is adding to the heat. Even if the air is pure it is a terrible place to work, day after day, through the heat of summer. Now, we have it in our power to make kitchen life much more pleasant during the heated term. With a good oil-stove all the work can be done just as well, and one would hardly notice that there is any fire in the room. Our folks are right in the midst of washing this morning. I have just been down to see how the thermometer stood. On the east porch it was 92°; on the west one, 84°; in the kitchen, 84°; and in the main part of the house, 79°. Two oil-stoves were burning under a boiler of clothes. I can easily imagine how hot it would have been in the kitchen if the fire had been in the cook-stove. As it was, the temperature was the same that it was on a cool porch on the shady side of the house, and but 5° warmer than the coolest place in the body of the house. Thanks to the oil-stove. We have a range of three oil-stoves, and you may walk through the kitchen in the hottest day of summer, when the oven is full of baking bread, and my wife is ironing, and cooking dinner—all the stoves burning—and you will hardly notice any difference in temperature between the kitchen and parlor. There are oil-stoves made that are safer than any cook-stove; and the oil bought by the barrel will cost no more than wood at the price it is usually sold at in the village market. That is, *here*, at least, I can take wood to town and sell it for enough to pay for oil that would do the same amount of cooking.

A niece of the writer has no cook-stove in the house. The kitchen is warmed in winter by a furnace, the same as the rest of the house. But I would not advise this. Use the cook-stove during cold weather, and even cool mornings and days in summer, lighting the oil-stove whenever the cook-stove makes it uncomfortably warm. This will be the best economy, and the most healthy practice. Often on a cool morning, when you wouldn't have any fire in the furnace or heating stove, a little fire in the cook-stove would be pleasant, particularly to the older people, and conducive to health by driving out dampness. For ironing, the oil-stove is simply perfect. At first my wife thought that she couldn't make a success of baking bread; but I got her some new tins of just the right size, and experimented a little for her, and now she will bake an oven full of bread in 40 minutes as nicely as it can be done in any stove oven, at a cost for fuel of about half a cent. Women, like us men, are sometimes a little old-fogyish. The first time my wife undertook to get dinner on the oil-stove the potatoes would not get done on time. Dinner was an hour late. That upset her, for she can not bear to be behindhand. She made some pretty strong remarks about oil-stoves in general, and hers in particular, and was more than ever in love with the good old Stewart cook-stove that she had worked over for twenty years. I got dinner next day, or, at least, stewed the potatoes. First the bright new tin steamer was smoked on the bottom, as it always should be, and then just water enough to make steam—about a quart—was put in. Being a little nervous, we started the thing 20 minutes sooner than the directions said was necessary, and had dinner ready 20 minutes before the time! The wife gave up with good grace, and has since gone back on the old Stewart, even for steaming potatoes. A good oil-range will cost about $25, with all the fixings. I was once looking at a friend's nice stone walks, and remarked, "They must have cost you a good deal."

"Yes," he says, "there is less money in the bank, but a mighty sight more comfort around home."

The same may be said of the oil stove.

Hudson, O., Aug., 1886. T. B. TERRY.

Friend Terry, I most emphatically agree with almost every point you make; but I notice you speak of *coal-oil* stoves, and say nothing about gasoline. I presume your objection to gasoline, judging from what you say on page 535, is the danger; but are not stoves for gasoline now made so that the chances of danger are reduced to a minimum? We have tried coal-oil stoves, and gasoline too; but we find the gasoline rather the more convenient; but we should like to have your ideas on the subject while we are discussing convenient kitchens.—In regard to pure air, I am getting of late so that it is very hard for me to remain in any room very long unless the air is pretty nearly as pure as I find it outdoors.

SEVERAL MATTERS FROM FRIEND HEDDON.

QUEEN-EXCLUDING HONEY-BOARDS.

YES, they are a grand success. I think that Dr. Tinker's article in last issue, supplemented by your copy of my own from the *C. B. J.*, must shed some light upon the whole honey-board question. I think the doctor was first to publish the device of the unity of the metal strips with the wooden slats, by letting the metal into side grooves; and he is entirely correct in saying that to him who first published it to the world, belongs the credit. We gladly accord it to the doctor, though we three, who were original in the same thought, had none of us ever seen it in any honey-board before.

MRS. CHADDOCK'S HONEY.

I am sorry to read the low prices Mrs. C. tells us she is selling her honey for. I think such low prices for comb honey are entirely unnecessary, and would, if long compelled, drive us all out of the business. On page 631 you quote Mr. Doolittle as "answering the wail of a few;" but take

him as authority as to the cost of producing honey, and where is Mrs. Chaddock's bee culture going to end? She is selling at a price below the cost of production, according to Mr. Doolittle, and I think his figures are about right.

SHALL WE EXTRACT DARK HONEY?

I say, "Yes." I notice your foot-notes to Mr. Pond's article; but I must say that I think you are in error. Give me all light honey in the comb, and all dark extracted, for most profit. I do not speak theoretically, nor from a local experience; but after jobbing and wholesaling many tons in nearly every Eastern, Middle, and Western State in the Union.

HIS 25,000 LBS. OF HONEY, AND HOW TO DISPOSE OF IT.

Since the great loss of three-fourths of my bees during the severe winter of 1884-'85, I have been compelled to raise extracted honey mostly, and this year we have 25,000 lbs. of as fine thick clover and basswood honey as I ever saw. I am having no trouble in getting 8 cts. per lb. for it, at our depot, in 50 and 100 lb. lots, packages thrown in. Perhaps you will remember my articles on the taking and caring for extracted honey, on pages 625 and 659 of GLEANINGS for 1885. You will recollect what I said about the results in disposing of our crop, if we would only take the pains to produce an article of extracted honey that is in every respect as nice and smooth as the best comb honey. Well, I find the results as there predicted; for my customers will not leave me, even if they can buy extracted honey, from the same blossoms, at 2 cts. less per pound. You recollect the raspberry honey you sent me, at a low price. Well, friend Root, it is not eatable, simply because it was either taken before it was ripe, or else allowed to degenerate after being extracted. I see a new and grander future for extracted honey, when our producers will supply a choice article; but I sample scarcely any, as I find it on the markets, that is good for table sauce. I am compelled to admit, that most that I have produced has been of inferior quality; but for the past three years I have found the better and far more profitable way. I believe the time is near at hand when I can job out 50,000 lbs. per year, at prices that will pay for producing.

"OUR NEIGHBORS."

I am sorry if you have made haste to print a lot of circulars after the copy of Mr. Cameron's paragraphs, as found on page 619. We know that these statements come from a man of good heart,—we believe from a splendid man; but we think he has made the common error of misjudging the class he has written them for. If all the readers were living and thinking on this elevated plane, his statements to them would be of much service to all; but such is not true, I am sorry to say, and I believe that such a circular would do more harm than good.

This article is now long enough; but if you choose I will point out to you the whys and wherefores, and suggest such subtractions, additions, and alterations, as I think would make it a circular of value. JAMES HEDDON.

Dowagiac, Mich., Aug., 1886.

Friend H., I think many would disagree with you in regard to the raspberry honey. The flavor is peculiar, yet I do not think it unpleasant. I should not, however, call it equal to the sample kegs of honey you sent us.—In regard to our neighbors, I am sure the circular referred to will do good among many classes. We should, however, be very glad to hear your corrections, alterations, and suggestions in regard to said circular.

"OUR OWN APIARY."

A GOOD REPORT FROM THE HEDDON HIVE; WORKING FOR COMB HONEY.

IN Aug. 1st No., page 605, Bro. Heddon says Bro. Hutchinson seems to be carrying this problem all alone, and that he receives many adverse reports. In all reports I have seen of tests of Bro. Hutchinson's plan of securing worker-comb without foundation, the parties have violated one or more of the principles as laid down by him. One fails to put on the surplus-case at time of hiving swarm; another put in a frame of brood. To succeed in securing all worker-comb with this plan you *must be sure* to put on the surplus-arrangement *at time of hiving*, and not next day nor next week, as some report doing, as in that case they will *build only drone-comb*, if a prime swarm, and strong enough to be worth any thing for surplus honey.

I am using the new Heddon hive this season, and have succeeded in getting as much surplus honey without foundation in the brood-chamber as with it, and the brood-frames are full of nice worker-comb which cost nothing. I use one section of the hive with foundation starters not over one-half to one inch wide, in the brood-frames, with queen-excluding honey-board above, and put on a case holding sections before I hive the swarm; part of the sections were full of foundation, and part with only starters. Others I arranged the same, except I filled the brood-frames full of Dadant foundation, and the colonies with empty frames have made as much surplus as those with full frames; and in neither case did they build drone-comb in frames or sections. In one experiment I used hybrids with full and with empty frames; in the other, Italians. The swarms hived on full frames in both cases were stronger than those on empty frames, and with this seeming advantage failed to come out ahead.

QUEENS AND SWARMING.

I am convinced, from experiments with several colonies this season, that the young queens do not hatch until a very short time before a second swarm leaves, and that the worker-bees control all swarming themselves. Several years ago I saw queens fly in less than one minute after coming out of the cell; and several times, on cutting out queen-cells, I have found no queen hatched, even when the queens had been calling one or two days, but with the cap of cell cut nearly off; and as soon as they were taken out of the hive the young queen would come out. I also had a colony of blacks in which the young queen was calling before they swarmed; and by taking the frame containing the young queen I made another colony which has never swarmed, and this is the fourth season since then. This season I have tested it by waiting two days after I heard the queens calling, and in no case did I find a queen hatched, but the cap cut loose on one cell; and as soon as the frame was taken out of the hive the queen hatched; and by

cutting out all other cells there were no second swarms. If the bees decide to swarm after the prime swarm, they keep the first queen from hatching when she wishes to; and then she begins to call, and the other queens in cells old enough answer her; and when they are about ready to leave they allow one queen to hatch; or if they intend to send out only one second swarm, they let all queens old enough hatch and go with the swarm. If they decide not to send out a second swarm they allow the oldest cell to hatch as soon as the queen is ready to come out, and then destroy the other cells, and you hear no calling of queens. 9—JOHN C. GILLILAND, 15—24.

Bloomfield, Ind., Aug., 1886.

SWEET CLOVER, OR MELILOT.

FRIEND GREEN GIVES US SOME NEW AND IMPORTANT SUGGESTIONS IN REGARD TO THE PLANT AND ITS HABITS.

THERE is a great deal of sweet clover in this locality, growing along the river-banks and other waste places, as well as along the roads, which in some places are lined with it for miles. I find that most persons are apt to regard it as a nuisance along the roadside, and many land-owners wage war on it with more or less persistency and success. Some of the objections which they make to it are well founded, while others are unfounded or unimportant.

The principal reason why it is objected to, I think, is the fear that it may prove a noxious weed. It is a strong, rapid grower, readily becoming established, usually holding its own tenaciously when once it gets a start, killing out other plants, and spreading from year to year. These are the recognized qualities of the worst weeds; and the farmer who sees it march along the highway and settle down in front of his place, as though it had come to stay, is apt to be alarmed at the thought that some day it may take a notion to invade his fields in just that way. His fears are groundless, though. Its seed will not start in a close sod; cultivation readily kills it; and even after it has taken complete possession of the soil, close mowing, so as to prevent any seed from maturing for two successive seasons, will eradicate it completely.

I have ridden for miles along a road where all the space between the fences, except a narrow wagon-track, was thickly covered with sweet clover, yet not a single plant was to be seen inside the fields. I have occasionally seen sweet clover growing inside the fence along the roadside; but it is a suggestive fact, that it is almost always the old tumble-down fence that lets the sweet clover through, while a good fence keeps it from the well-tilled fields beyond, as completely as it repels stray stock. There is a moral here, if you go deep enough.

The most reasonable objection to sweet clover along the country road lies in the fact that its tall rank growth often makes a close hedge four or five feet high along each side of the narrow wagon-track, thus cutting off all breeze from the horses. This close hedge, too, sometimes makes it difficult to turn out far enough to allow a team to pass. In this locality farmers frequently herd their cattle along the roadside when pasture is short, and these complain that sweet clover occupies the land to the exclusion of grass. Cattle will not eat it except when it is young and tender. Other objections are sometimes heard, most of which will apply quite as well to any other weed.

Now, what can we say in favor of sweet clover to the man who cares nothing about its value to the bee-keeper as a honey-producing plant? I can only say that it often takes the place of less desirable plants, and that its modest blossoms with their grateful perfume combine to render the highway beautiful and fragrant. Can we say any thing more practical? I hope some one can give us reasons more convincing to the average farmer, why this valuable honey-plant should be allowed to grow on the roadside.

Many who object to the rapid spread of melilot on the highway, accuse the bee-keeper of planting it, when they themselves not only cultivate the ground but sow its seed. Sweet clover, unaided, can do little to extend itself. Its seed is too heavy to be carried far by the wind, and it is not provided with any means of attaching itself to passing objects. The most efficient agent in distributing its seed is the man who leaves the ordinary track for the roadside when the roads are muddy in the spring. In this way the surface of the ground is broken up and prepared for the seed, while the wheels of his wagon and the feet of his horses, sinking into the ground where seed fell the autumn before, pick up portions of the soil filled with the seed and carry it along for rods and sometimes for miles, and there drop them to form a new nucleus of growth. Sweet clover is apt to spring up wherever any grading of roads is done; and the man who plows the roadside for the purpose of scouring his plows, though an enemy to humanity in general, is a friend to the bee-keeper in a sweet-clover district.

While under favorable circumstances the seed will grow and do well if sown at any time of the year, it will be much more apt to grow on uncultivated ground if sown in the fall, so the snows and rains of winter and spring may beat it into the ground.

You are probably right as to the cause of the sooty color of the honey sent you by friend Muth. The sweet-clover honey gathered here is nearly if not quite as light colored as that from white clover, while the flavor is, in my opinion, superior. When the honey is unmixed it requires no expert to tell that it was gathered from sweet clover, especially if freshly gathered. In extracting newly gathered sweet-clover honey, the current of air coming up out of the extractor is laden with a perfume as distinct and unmistakable as that experienced by holding a bunch of the blossoms to the nose. We had promise of a good yield from sweet clover, and indeed it started out well; but the long drought has checked its yield so that what honey we get is considerably mixed with that from other sources. If it were not for this I would send you a sample of the honey, which I think would compare favorably with any you have ever seen or tasted.

Dayton, Ill., Aug. 10, 1886. J. A. GREEN.

Thanks for the additional facts you have given us in this matter, friend Green. I believe you are right in regard to its propagation and extension along the roadsides, by its being carried along by vehicles in the way you suggest. I am glad to have my opinion corroborated in regard to the quality of the honey. I should like to know if anybody has been successful in raising the

plant by the acre. It seems from the above, and from what others have written in regard to it, that a different treatment will be necessary from that given to ordinary cultivated plants.

A VISIT TO OLIVER FOSTER'S APIARY.

FRIEND BRUBAKER GIVES US A PEN SKETCH OF IT.

AFTER two months of constant work in the apiary I was thoroughly tired. The dry weather put a sudden stop to the honey-flow. After basswood bloom, and while the bees were taking a little rest, I concluded to take a little play. I had written friend Foster a line, stating I was going to the east part of the State; and as I would pass within a few miles of his apiary, if agreeable I should like to stop off and visit him and see his methods, etc. He not only informed me, by letter, that he would be pleased to have me call, but also said he would meet me at the depot.

On the 29th of July I took the train at Maxwell, and was soon speeding eastwardly over the fertile prairies of our beautiful State. The effects of our all-summer's drought were visible on all sides. The pastures, instead of wearing a mantle of green, as is usual for this season of year, were all dried, and "brown and seer." The dry beds of brooks and streams, the wilted corn, the dried-up appearance of gardens, and the many fires all along the 130 miles I traveled, which had originated from sparks from the engines igniting the dry grass, all plainly told of the serious effects of the protracted drought.

Reaching Mt. Vernon at 10 P. M. I took lodging at the hotel, instead of going to friend Foster's. After a sound sleep I was up at five, ready for a walk; but the little city was all silent in slumber at this early hour. Naught but the sound of the melancholy katydid, and a few low notes of birds were heard to break the silence. A few minutes' walk brought me to a point on the shady street where a pleasant landscape was presented to the sight. Nestling down in a small valley in the midst of a shady clump of trees, stood a cosy little house. To the south, near by, stood a large number of hives, arranged in blocks and alleys. Close by were the work-shop and honey-house, all neatly painted. I recognized this at once as being "the place."

On entering the apiary the first object that especially attracted my attention was a little girl-baby, about two years old, standing near the corner of the house, with little curls reaching down over her little forehead, calling for papa. I felt somewhat disappointed when the timid little darling refused to shake hands or enter into any conversation. It was only a few seconds after when I introduced myself to the "boss of the ranch," whom I found in the shop, and in a very short time we were talking bees and honey and fixtures as if we had always been acquainted. Mr. Foster is a young man, 29, full of vim, and a lover of his chosen occupation; and, judging from the number and character of his apiarian fixtures that he has invented, it is easily seen that he is possessed of more than ordinary inventive genius. He has in his home apiary 225 colonies; and located about 5 miles north are 100 more—in all, about 325. Up to date he had extracted 10,000 lbs., and taken 4000 lbs. of comb honey; but, like some more of us, he lost considerable honey by not having every thing in readiness quite early enough. He has also sold and shipped 126 nuclei, at an average of $3.43, besides quite a good number of queens by mail. After figuring up his profits mentally for a few moments, I was almost ready to believe what the landlord at the hotel had told me the evening before, when, on inquiry as to whether he knew a bee-keeper by the name of Foster, in the town, "Yes," said he; "I knew him when he started in the business ten years ago, a poor boy, and now he is making more clear money, I think, than any other man in town."

Whether this is strictly a fact or not, a glance at his premises tells of prosperity; and while he works hard to make it win, I was led to think, while in his little home, "No wonder his business is prospering." When, at the beginning of the day's labor, though a very busy time, the Bible, that best of books, was taken from the stand, and from its holy pages a chapter was read, and an humble invocation asked of the Dispenser of all blessings. How could it well be otherwise than that, with hard work and the blessings of Heaven, a man should prosper? I think I never saw so many colonies together, where all were so uniformly a fine type of Italians. I left, much benefited by my visit, and *almost* missed my train in the evening for having been absorbed in conversation with friend F.

I must quit now, short off. I hope no one will think hard for my giving my friend such a friendly notice.

So far as I have been able to learn, honey is selling at about 10 cents for extracted, and 12½ to 15 cents for fine pound-section honey.

Maxwell, Iowa, Aug. 2, 1886. D. E. BRUBAKER.

Many thanks, friend B. We have enjoyed every word of your account of your visit, from the curly-headed little girl to the time you almost missed the train; and especially that part of your talk where you mention friend Foster's taking down the Bible at the beginning of each day's work.

FOUL BROOD, AND ITS MANAGEMENT.

DIRECTIONS FROM PROF. McLAIN, OF THE U. S. APICULTURAL STATION.

MR. E. R. ROOT:—Your father told me last week that you were having some trouble with foul brood. I told him that I would send a prescription for the cure of foul brood, and also a prescription for use as a preventive.

Take of soft water, 3 pints; of dairy salt, one pint. Use an earthen vessel. Raise the temperature to 80° F. Do not exceed 93°. Stir till the salt is thoroughly dissolved. Now add one pint of warm soft water in which has been thoroughly dissolved four tablespoonfuls of bicarbonate of soda (use the crystal). Stir thoroughly. Add to this mixture sufficient sugar or honey to sweeten it, but not enough to perceptibly thicken it. Now add ¼ oz. salicylic acid. Merritt & Co., of Cincinnati, make a pure salicylic acid from the oil of wintergreen (Konk's solution of salicylic acid No. 1). Mix thoroughly. Let this mixture stand for two hours, when it becomes settled and clear.

Treatment.—Shake the bees from the combs, and extract as clean as possible. Now thoroughly atomize the combs, using the mixture and a large

atomizer. The tinsmith can make a good one for 25 cents. Return the frames to the colony.

If there is no honey to be obtained from the fields, feed honey or syrup to which has been added 3 tablespoonfuls of the mixture to each quart of honey or syrup. Stir well. The honey just extracted may be used without injury to the bees, if the mixture is added; but no more should be furnished than is consumed. Atomize the colony two or three times more, simply setting the frames apart so as to direct the spray well over the combs and bees—not brushing off the bees; three or four days should intervene between the times of treatment. The last may be given on top without removing a frame.

As a preventive, apply on top of the frames, or in any way by which the bees may get it. Also burn old dry bones to an ash, and pulverize. Mix up a gallon to each 50 colonies in the apiary, of the above mixture, adding enough sugar or honey to make it very sweet (say two or three times as much honey or sugar as would be a proper quantity for use in the atomizer). Stir in a full half-pint of the powdered bone ash. Place this gallon of mixture in, say, four shallow vessels—perhaps bread-pan feeders with floats on top—and stand these four in different parts of the apiary. You will be surprised at the rapidity with which the depleted colonies will recuperate and grow strong again.

If you fear that the exposure of sweets in the apiary will induce robbing, the mixture can safely be fed the customary way on top of the frames in the hive.

I would recommend that you give the entire apiary one application of the mixture prescribed *for cure*, as this treatment frequently prevents the presence of the disease where it was not before possible to detect it.

The quantity prescribed for use by means of the large atomizer is sufficient to treat 150 colonies. Not reckoning the sugar or honey used, the cost will not be more than 15 cents. I have prescribed this treatment with entire satisfaction and uniform success for the past two years.

I will mention the facts in two or three of the apiaries for which I have prescribed this treatment.

1. Number of colonies in the apiary, 46; number apparently diseased, 13; number actually diseased, 28; disease so far progressed that the stench was very offensive in the yard; bees crawling out of hives to die, by tens of thousands; effect of treatment apparent in one day; a permanent cure in each case.

2. Number of colonies, 60; serious cases, 38; combs black and putrid; a few had already been burned; effect of treatment apparent at once; a permanent cure in each case.

3. Number of colonies, over 150; number of colonies diseased, 60; bees swarming out; stench from hives nauseating; combs black and rotten; brood putrid; whole apiary treated; disease immediately arrested; effect of treatment on affected colonies instantaneous, even on apparently hopeless cases; every colony cured; disease eradicated, leaving no trace behind. Colonies soon all strong, healthy, and prosperous. For the purpose of further experiment, the combs of healthy and diseased colonies were exchanged; combs from diseased colonies being given the healthy colonies, and the combs of healthy colonies placed in the diseased colonies. The treatment was applied to both alike. In every case the disease would immediately disappear, and in many cases the diseased colonies were soon more populous and prosperous than those which had had no disease and had been undisturbed.

This treatment, which is simple, cheap, and easily and rapidly applied, seems to be efficacious in the most virulent forms of foul brood, and seemingly furnishes immunity from the dreaded scourge.

Aurora, Ill., Aug. 6, 1886. N. W. McLAIN.

P. S.—The remedy for foul brood—the formula for making and applying, which I sent you, effectually eradicates the worst cases in about 12 days, without the cleaning of a hive or melting of a comb. I am glad to hear that you have no need for it in your apiary. The disease described in GLEANINGS, as being in your apiary, is, I think, not foul brood. If you have any more trouble with it I can tell you what to do. N. W. M.

U. S. Apicultural Station, Aurora, Ill., Aug. 17.

HOW I HIVED A SWARM UNDER DIFFICULTIES.

HOW A BOY OF 63 SUMMERS MANAGES TO CLIMB A TREE AND TAKE DOWN A SWARM.

ON the second of last month, between three and four P. M., while working in the field I was startled by a swarm of bees passing over my head. I immediately followed, but could not keep up with them, on account of the fences and fields of grain. I noticed what direction they took, and returned, discouraged, to my work. About 6 o'clock I took a stroll through a thin piece of woods to a small creek that runs about ¾ of a mile from where I write. I looked up the trees, to see if I could discover any bees, but to no purpose till I came to cross a fence. In doing this I turned to look back, and discovered a large swarm of bees on the outside small limb of a blackwalnut-tree, about 50 feet from the ground. It looked very tempting; but the question came, how to get it. No ladder was long enough, no long-handed saw to be had, nor anybody to lend a helping hand. I got a handsaw, which I tied round my neck, a box with a frame of empty cells and 6 other empty frames. In trying to climb the tree I found it was too large around the body, in order to reach the first branch. I got a rail, crawled up so far that I could just touch the branch; but when I got on it, I found the next branch still further off. Persevering, and not minding a little skinning of my legs, I reached the second branch, when I had comparatively easy work to reach the branch on which the swarm was hanging. I sawed it off; but in falling it stuck fast to a lower branch, the bees meanwhile ascending to a higher branch, which I cut off immediately, as I reached it, to prevent them from clustering on it. They did not go further up, so I descended, cut every branch on which they lodged, as the branches stuck till the whole concern came down with a crash, smashing the cover to the box. I descended as fast as I could, covered the box with an old coat I had taken with me, and began shaking the branches I had cut off, in front of the box. As soon as I had one clear of bees I carried it off, till I had all the bees pretty well on the ground. Then I picked up a little dry wood, made a smoke to hurry up business, as I wanted my supper, for the sun was going down. I managed to reach home shortly after sundown,

with my swarm, carrying it before me, and such a heat they gave off! They are blacks, and I don't know where they came from. In six days they filled 10 empty Gallup frames, and are uncommonly docile. I think the whole business was pretty well done for a boy of 63 summers, not having a veil or hat on, nor being stung once.

MELILOT HONEY SMOKY, AND WHY.

The atmosphere of large cities is heavily charged with coal smoke, which spreads for miles around in such small imperceptible particles that one often does not notice it till he passes his hand over a leaf or flower, when it will become colored black, especially when a little damp. Is that not the cause of your melilot honey being smoky, as we do not know any thing about its being smoky around here? F. J. M. OTTO.

Sandusky, O., Aug. 10, 1886.

PREVENTING INCREASE, AGAIN.

MR. HEDDON'S CRITICISM.

ON page 562, Mr. Heddon says: "Referring to page 559, on 'Preventing Increase,' it is quite easy to see why Mr. Robbins failed of success," etc. Ever since reading that, I have been wondering what it is that can be so easily seen. I know better now than I did when I wrote the article referred to why I failed; but I gave no intimation of it there. Is it because I was careless, or did not follow the method properly? or was it because of the swarming mania of my bees? Please do not be afraid to speak out, Mr. Heddon. I might add here, that I have not known a failure of said plan when properly followed this year, although the swarming instinct of my bees seemed about tripled, more or less, but I have been unable to practice it much.

We are too apt to render "snap judgment" concerning these things. I have faith in this method; and because some of us may fail with it, or any other such devices, is no proof that the principle of it is not correct. My mother can take Graham flour, an egg, with some salt, soda, and buttermilk, and make Graham gems that will fairly melt in one's mouth. I might take those same ingredients and follow her directions, and make nothing good but a good failure. Should I conclude that flour, salt, soda, buttermilk, and egg, will not make good gems? Nonsense! You see, it all depends upon how it is done.

While I am on this subject I would say that a great deal depends upon adaptation. Our gifts, habits, and conditions, are so diverse that we can not all do things best the same way, and we must have systems adapted to our ways. My mother can make the best gems, her daughter-in-law the best cake. I certainly do not believe that the Simplicity is the *best* hive, but A. does. It suits him—it does not suit me. Adaptation, usage, conditions, these apply to little things as well as great; and if we would bear this in mind we would not make so many confident assertions in the controversies over methods and systems in apiculture. This is not all, but I shall stop here. You see I have wandered; but I have done so because one thought suggested another.

THAT QUEEN-EXCLUDING HONEY-BOARD.

I am bound to have a queen-excluder of some kind, and I believe that the one illustrated on page 613 is just the thing. I have not been nearly satisfied with any thing of that kind that I have seen yet, except that one. But the board, as Mr. Heddon describes it, has the bee-space all on one side, and is not adapted to the reversible hive. On page 93 of "Success in Bee Culture," he says: "The queen-excluding metal works into these one-half bee-space honey-boards admirably; and for all I can see at present we had better use the metal when we use queen-excluding honey-boards." Is Mr. Heddon or any one else manufacturing such a honey-board?

EMPTY BROOD-NESTS.

I do not intend that friend Hutchinson shall carry this problem quite all alone. If my help is of any advantage he shall have it. I am confident that his system of hiving swarms upon a limited number of frames—empty frames at that—with surplus room above and queen-excluders between, is as near just the thing as we can get. The system fits in every part. Theory and my experience, I take it, both confirm it. True, many of my bees will build drone-comb, however I may work them; but this I attribute to their everlasting irrepressible disposition to swarm. If I can ever control that, I think I shall practice that system altogether. 4—GEO. F. ROBBINS, 57—93.

Mechanicsburg, Ill., Aug., 1886.

Friend R., we stand ready to make any kind of a honey-board anybody wants—part metal, part wood, or all wood or all metal, and we will put a bee-space on one side or both sides; but as the matter now stands we don't dare to make up ahead queen-excluding honey-boards of any kind, for they are changing all the while. I for one should be very glad indeed to find it were possible to settle down on some definite arrangement.

MISLEADING STATEMENTS.

IS IT TRUE, THAT CERTAIN HIVES GIVE A LARGER YIELD OF HONEY THAN OTHER HIVES?

BEFORE me lies a letter from an inventor and supply-dealer in which are these words: "The use of my hives and surplus-cases will give you more honey than you now produce, with one-half the labor;" while further on, in this same letter, these words occur: "My methods will beat yours two to one." In one of the bee-papers I noticed it said, not long ago, that *more than double* the honey could be obtained by using certain inventions; and as I consider such statements fallacious, I desire to explain my position in this matter. While I believe there is little difference regarding the labor required in the manipulation of one hive above another, where a term of years is taken into consideration, still it is not from the labor point that I take exception, but to the greater production of honey. Can it be possible that any man can be so blinded as to think that a bee-hive of his invention can gather or produce honey? Elisha Gallup once said, very truthfully, that, "other things being equal, a colony of bees will build as much comb and produce as much honey in a nail-keg as in any hive, and they will produce as much honey in my nail-keg as in yours." From this we see it is the bees that produce the honey, not the hive; and any of the good hives now in use that meet all the requirements of the bees will give as much honey

as any of the new ones for public favor. Wherein one hive is better than another is not in the production of honey, but in its being better adapted to suit the wants of the bee-keeper. Because one man wants 50 pounds of honey in sections on the first of October, with his bees in a starving condition below, while another man wants 25 pounds of this honey in sections, and 25 in the brood-chamber, does not alter the product of the bees in favor of the first, one particle; yet for a big send-off for certain hives the first is claimed to produce double the profit of the second.

Taking the price of sugar and honey into consideration, together with the labor required to get the first into condition to winter equal with the second, there is not a farthing's difference between the two. Several years ago, when honey was higher in proportion than sugar, the cash income might have been in favor of the former; but that would not change the production of honey any. If I am correct in the above, and I believe I am, how can we afford to throw away all of our old hives and fixtures, and invest in these new ones at a higher price, only to reap the same results except in a different form?

As I was almost if not quite the first one to advocate the contraction system for the production of comb honey, I wish to say that all I claim for it is, that it gives me the larger part of the white honey during the height of the season, in the sections, instead of having the same stored in the frames of an uncontracted hive; while later on, when the honey is not quite as white and showy, but equally good for the bees, I get their winter supply in the body of the hive. To accomplish this end I work somewhat as follows: When a colony swarms it generally has the full complement of frames in the body of the hive, which, as a rule, are full of brood. To hive the swarm I simply take their frames of brood out of the hive, with the few bees which adhere to them, and put them in an empty hive on a new stand, when but five frames are put back in the place of the eight or nine taken out, the rest of the space being filled up with dummies. The sections are now put back, and the swarm returned. They are now left for 24 days, at which time young bees are hatching very plentifully, when the dummies are taken out, and frames of empty comb placed in the center of the hive between the brood for a threefold purpose—to keep the bees from swarming again, to give the queen room of a fresh nature in the center of the hive, and for a sufficient supply of honey to winter upon. The brood in the combs carried away soon give a splendid colony, together with a queen given them, so that they in turn give a good yield of honey, and also get in good shape for winter. It will be seen that my aim has been to get all the honey possible in the sections in the height of the honey season, and, later on, both honey and bees in the hive for winter. The above plan may not suit the requirements of any bee-keeper besides myself, and therein is where lies the difference of views regarding hives; but I claim that, aside from this, other things being equal, there is not difference enough between any of the good hives now in use to pay for the cost it would involve to exchange. G. M. DOOLITTLE.

Borodino, N. Y., Aug., 1886.

Friend D., while I emphatically agree with you about misleading statements, if I understand you correctly I can not quite agree in regard to the amount of labor required to manipulate different hives. Quite a number of successful bee-keepers of my acquaintance use hives which, it seems to me, are needlessly complicated; and I have often thought they might just as well get just as much honey with half the labor, if they had their hives and other things arranged more conveniently; and while I do not believe in changing hives very often, I think there are some kinds of hives, even now in use, that it would be money in the owner's pocket to burn up; that is, if he is going to keep bees and produce honey for, say, four or five years to come. I would, however, experiment pretty thoroughly on a few hives of the pattern that seemed to be an improvement, before going to the big expense of transferring and changing over the whole apiary.

EXPERIENCE WITH FOUL BROOD.

FRIEND LONG TELLS US HOW HE MANAGED TO GET RID OF IT.

THE account of trouble at the "Home of the Honey-Bees," in GLEANINGS for Aug. 1, brings to mind the experience I had some years ago with foul brood among my bees. It was in 1878 or '79 that this scourge first appeared. Where it came from, or what its origin was, I do not know, and can hardly say that I have any idea. When I first found dead brood I supposed it had died from cold, starvation, or some other cause, and the disease made good progress in a number of colonies before I was aware of the danger. Colonies containing queens brought from other places were especially affected. I remember a colony containing a queen purchased of J. H. Nellis; one the queen of which came from a breeder in Canada; one having a tested queen from A. I. Root, were all affected. I do not say that these colonies alone were affected; there were, of course, others; but it did seem that the colonies containing Italian queens purchased were especially bad. After becoming convinced that I had foul brood I set about endeavoring to cure it, and put in practice all information I could get from the bee-journals, etc. This was during the season of 1880. I fed salicylic acid, sprayed the bees and combs with an atomizer, cut out and buried the worst parts of the comb, and got the disease much less, but not eradicated. The spring of 1881 I saw but little of the disease; and it being a good honey season, by fall it seemed to have entirely disappeared. I congratulated myself that I was well rid of the scourge. It proved, however, that, by reason of the remarkable flow of honey we had during August, 1881, the disease had been only covered up; for on examining some hives, Feb. 15, 1882, I again discovered foul brood in several hives. It was indeed discouraging, but I did not feel like giving it up, and accordingly went to work more thoroughly than ever.

I now tried D. A. Jones' starvation plan. I took the bees from the combs and put them in the cellar, from 100 to 125 hours; then I gave fdn. in a new hive, thoroughly scalded all ducks, feeders, hives, etc.; melted the combs into wax, and boiled the honey, and by persistent effort was able to succeed in eradicating all traces of the disease. The

hives, I did not use for a year or more, but have since made use of them without any damage resulting.

The spring of 1883 I found only several cells in one colony. I watched very carefully, but since that time have not seen a cell of foul brood in any of my colonies. I have never seen any foul brood in any bees in my neighborhood, and have transferred and handled a great many, and consider myself fortunate that I was able to stamp out the disease. The loss was considerable; but the experience gained is of value, for I am satisfied that I know and can detect the disease. E. C. LONG.

Williamsville, Erie Co., N. Y., Aug. 12, 1886.

HAS THE HOME OF THE HONEY-BEES REAL FOUL BROOD?

ONE OF CALIFORNIA'S LARGE HONEY-PRODUCERS.

FRIEND ROOT:—I have just received your statement about having foul brood in your apiary, and I feel in duty bound to write you in regard to it, as I had two colonies last year affected precisely as you described. They began to dwindle away, having combs pretty well filled with brood; in a few days I noticed pin-holes beginning to appear, and then I discovered that nearly all the brood was dead. I was alarmed, thinking I had foul brood surely. I kept a close watch, and soon found that there was *no smell* from the combs; and as I had heard of no cases in the neighborhood I concluded to wait and see the result, supposing that, if it were really foul brood, the rest of my colonies would soon contract it; but I had no more of it. The two colonies gradually dwindled and died, the combs of brood dried up so that the cells contained only dust, so I concluded that it was *not* foul brood at all, and gave myself no further anxiety about it. I kept my bees through the winter, and sold them in March last prior to going to California on a short tour of inspection, and I have not heard of a single case either among those I sold or in the neighborhood anywhere. I conclude that it could not have been foul brood, as I did not destroy any hives or combs, and I have great hopes that you are not so badly afflicted as you fear. Could I have seen your article as just published, or one like it, I should have been terribly alarmed. It was only my ignorance that saved me. You know, "Where ignorance is bliss 'tis folly to be wise."

MR. HARBISON'S APIARY; THE MAN WHO HAS 3000 COLONIES.

I regret that I did not know that you had a brother near San Diego, as I would have visited him while there. I spent a week in one of J. S. Harbison's apiaries. It would make you smile to see what he does and how he does it. He uses the "Harbison hive" only—a large box-shaped hive with a door in the rear, made of redwood lumber dressed on the inside only—no paint wasted on any of them, and in the apiary I was in (425), a large percentage of the hives were corked up with rags to prevent robbing. I was there in April. Bees were brooding up, preparatory to swarming. Mr. Harbison told the employees *not* to be careful in manipulating to keep from killing bees. "Mash them in shutting the door, even if a quart were killed in each hive," he said; they would be "all the better for it." This sounded very strangely to eastern ears, as I have always felt it to be cruel as well as wasteful to kill bees at any time, more especially in the spring. Mr. Harbison told me that he takes no bee-papers, uses no comb foundation, no extractor, nor bellows smoker; his smoker is a large sheet-iron box in which he burns chips, bark, or blocks of wood. He uses bits of empty comb for starters stuck on with stiff glue. With all this method he has accumulated a good deal of wealth, so I was informed. He told me that he had 3000 hives with bees in them. He is obliged to keep his apiaries out in the mountain gorges, remote from the fruit-raising interests, as the bees damage the fruit in the drying season.

Mr. Heddon and some one else have said lately that they know of nobody who ships honey in crates as the bees store it. Every one in California who uses the Harbison hive and case ships in precisely that way. J. W. MARGRAVE.

Hiawatha, Kan., Aug. 1, 1886.

Thank you, friend M.; but I am pretty sure we have had at least one form of real foul brood. In our case the smell was very plainly perceptible in every hive that was affected; and as pieces of comb having foul brood have been many times sent us by mail, I recognized the smell at once. Since our last report it has broken out, or commenced to break out, in several colonies in the vicinity of those first affected. The *bees*, however, from those first affected are now rearing healthy brood, and are doing nicely, so we feel confident we shall succeed in killing it out.—I suppose that, in Mr. Harbison's apiary—that is, in his climate, bees are counted of no value; but even if such is the case, it seems sad to think of killing them needlessly.

A FEW KIND WORDS FROM ONE OF THE OTHER SEX.

HOW TO KEEP HONEY FROM CANDYING.

I HAVE been sitting quiet for a long time, listening to the ideas which the brother and sister bee-keepers have advanced, and enjoyed very much reading the talks about bees in GLEANINGS. Not only about ladies as bee-keepers, but many other things about bees, that I found to be very interesting. Especially do I enjoy reading Our Homes. I think those pieces have done me good, and I have received new light. My husband has taken GLEANINGS over three years, and truly we would not know what to do without it. We have kept a few swarms of bees for several years, and I do love to watch them gather the honey, and work so busily. Sometimes I feel like telling them, after they have laid up a good share for themselves, to gather some for me. I like to help take care of them.

We shall try to winter about fifty swarms. If they live through the winter there will be work enough to do in the spring, and I shall endeavor to leave my work so I can help take care of the bees. Now, sisters, do not be discouraged, but work among the bees if you enjoy it. I think one of God's greatest blessings is the beautiful sunshine and good pure air; and if we are able to be outdoors we may enjoy this blessing. I think we can have better health by leaving our work and cares in the house, and work outdoors awhile. And sure-

ly good health helps to make good dispositions and happy homes. I think something as Mrs. A. does about these daughters who sit in the parlor with folded hands, or perhaps employed with a little fancy-work. Help mother do up the work, and then she can find time to sit down as well as you, or perhaps she can leave her work and watch the bees. It will do her good, and you too; for do we not receive a blessing in doing good to others, and trying to make them happy? Go about thy Master's business; find something to do. It may not be in the kitchen, it may not be among the bees; but God has something for each one of us to do. He is calling thee; arise, and go forth, trusting in his word.

HOW TO PUT UP EXTRACTED HONEY.

After reading friend Tweed's experiments with candied honey, on page 617, I must tell how I put up honey to have it keep. My way is pretty much the same as the one laid down in the A B C book. Sometimes I use bottles, but I prefer cans. When I use bottles I have the corks tight, and paste on paper over the cork, letting it come down over the bottle pretty well. I get my honey hot, but think it is better not to boil it. I have kept honey in this way from one to two years. I have put up honey in this way for over ten years, and I never fail to have good luck. Now as to the kind of honey; I did not know that it made any difference. I have put up several kinds. Last year I put up linden and I do not see why that was not as nice as the other. Perhaps there may be, but I have never put up any but that kept all right. I am inclined to think it is more the way it is put up than in the honey.

MRS. JENNIE M. JOHNSON.

Rexford's Flats, N. Y., Aug. 14, 1886.

AN INTERESTING LETTER FROM AN A B C SCHOLAR.

A REMINISCENCE FROM ONE WHO IS ACCUSTOMED TO HOLD THE EDITORIAL HELM.

SOME men prefer to become somewhat acquainted before receiving an introduction; but I shall proceed to introduce myself to your many readers without further formality; and after I get through the ceremony they will be surprised to learn that so bright a light has been concealed under so small a bushel for so long a time without being discovered.

Some men were born great; others were born in Ohio, and to the latter class I belong. Nearly forty-five years ago I began to make trouble in this world by being born in a log cabin, situated in the township of Hanover, Ashland County. At the age of ten years my home was transferred to the broad prairies of Illinois. I have made repeated visits to the old farm, and of that particular locality the poet expresses my feelings in the following lines:

I love thy rocks and rills,
Thy woods and templed hills.

Yes, indeed, I shall ever cherish the place of my birth, and hold in sacred remembrance the hardy pioneers who made that wilderness to become productive, and a desirable place of residence. In fact, I sometimes feel as if I could adopt the language of the Babylonian captives when they expressed their deep longings to be released from bondage and return to their beloved Zion.

Was my father a bee-keeper? Of course, he was. Am I a bee-keeper? Of course, I am. There, now, you have the secret at last, and can judge at once what has constrained me to pen you these lines. Box hives were quite fashionable forty years ago, with variations in style and size. My father made a cupboard-shaped hive and put a swarm into it. The colony clustered in one corner, built lots of combs, but never swarmed, and never stored more honey than they seemed to need for housekeeping. Coming to Illinois he adopted the new system, took GLEANINGS, and ordered one of the first extractors of you ever introduced into this community.

In the course of time I caught the idea that I could keep bees; but having a wholesome dread of stings I delayed the attempt till some five or six years ago. I then bought a colony in a chaff hive, and have wintered a swarm in it successfully ever since. The first season I attempted to secure comb honey without putting starters in the sections, I failed of course. I learned better, and now I believe I can run a small apiary as well as the next man. But it requires study, experience, patience, diligence, and a perfect knowledge of the character, strength, and condition of every colony, as well as the nature of the season. I studied your A B C book morning, noon, and night; I read all the bee-literature I could get hold of, and I made personal tests of nearly every feature connected with the art of bee-keeping. I became infatuated with my bees—as much so as I was with telegraphy while acquiring a knowledge of that mysterious mode of communication; and even at this day, when the novelty of the occupation has worn off, I am thoroughly impregnated with enthusiasm during the honey season.

I keep bees simply for exercise, recreation, and—honey. This season I put in my best licks on a small scale. I had 17 colonies; worked them for all they were worth, and realized my most sanguine expectations in comb and extracted honey. Besides my own, I took care of the bees of a neighbor who can not be at home; and between the two I was kept more than busy during the swarming season; for, perhaps, in the middle of a "heavy" editorial the little boy would rush into the sanctum with the pleasing announcement, "Bees are swarming!"

Having acquired the art of bee-keeping and honey-raising, I am now engaged in working up a market for the nectar, and am succeeding quite well. In the first place, I advertise "judiciously." But, what is "judicious advertising"? some one may ask. Well, in my case it means to advertise in *my* paper. For bee-keepers, as a general rule, it may mean to advertise in GLEANINGS; and so you see every publisher of an advertising medium might feel inclined to define the meaning of that phrase so as to take in his own paper.

He who with bees would thrive
Will either bust or advertise.

Having advertised, results will follow in due season. Then give good weight and a pure article. Strange it is, that so much prejudice exists against honey. One customer said she wanted none made of sugar; another would buy only one section because it might sour. It may require some time to disabuse the people of these erroneous notions, but I generally succeed after one fair trial.

I weary your patience and crowd your space with what may interest nobody, therefore I bid you God-speed in your endeavors to benefit mankind by sweetening their lives physically and spiritually.

Naperville, Ill., Aug. 6, 1886. D. B. GIVLER,

Friend G., here is our editorial hand. Long may you prosper with the bees and with the editorial pen. I always felt as if it were a pretty good thing to be born in Ohio, but I did not exactly understand why till you made it so plain. I have sometimes wondered if anybody else knew exactly how it sort o' twists one when he is suddenly interrupted in the midst of something grand for humanity, by the announcement, "The bees are swarming," "There ain't any potatoes for dinner," or that the baby had fallen down stairs. If the editor is a Christian (and all editors ought to be, especially if they are born in Ohio), he must look pleasant, stop his editorial, and take the chances of being able to "catch on" where he left off when he gets the bees, potatoes, and baby righted. I am sure you are a Christian, friend G., or you would not love those lines about the "rocks and rills," as you seem to. Let us hear from you again.

HEADS OF GRAIN
FROM DIFFERENT FIELDS.

WHEN THERE IS AN ABUNDANCE OF HONEY IN THE FIELDS, WHY IS IT THAT MY BEES WON'T WORK?

FRIEND ROOT:—Can you tell me why my bees do not work more than they do? I often go out and stand by the hives (I have two), and I can't see a bee come out in five minutes, even on a nice day. They are hybrids and Italians, and I think the hybrids are the sauciest ones I ever saw. I get stung three or four times every day at one hive. Both colonies have good laying queens. I have one colony with 6 brood-frames in it, and one wide frame with sections, but they haven't 5 lbs. of honey in their whole hive to-day. They have made a little buckwheat honey, and a very little. There is about 50 acres in blossom within a mile of me, and about 3 acres on the farm I live on, within 500 yards of my bees; yet they do not seem to do much, while my neighbors' blacks are gathering a fine lot. I have my bees standing under two large maple-trees; do you think they have too much shade? The sun does not shine on the hives except from sunrise till 8 o'clock A. M., and from 4 o'clock till 7 P. M. They stand within ¼ of a mile from a lake that is a mile long and ½ mile wide. Do you think they are too near the water, and shall I lose many of them in it, if I should start an apiary here?

Monticello, N. Y., Aug. 10, 1886. F. SOMERVILLE.

It would seem that your hives are not very full of bees, if you can find a period so long as five minutes without any bees coming out or going in. A good strong colony in the middle of the day should have a dozen or two of bees constantly around the entrance, and more or less passing out and in every second.—We are well aware that buckwheat does not always yield honey, although it seems as if fifty acres ought to set them booming. I do not think you can have a better place for them than in the shade of maple-trees. I do not think the lake has much to do with it, unless it is in such a direction from the apiary that the prevailing winds are most of the time blowing from the apiary toward the lake.

STILL THE HONEY-DEW.

For the last four or five weeks there has been a continual flow of honey-dew, there having been no rain during that time in this part of the country. We did not have time this spring to provide hives enough for our bees, and have upper stories on only a few of them, therefore we are obliged to extract from the brood-chamber to prevent swarming, and it takes only a week or so for the bees to have every thing full of the black stuff. There are a good many flowers in bloom which I think contain a good bit of honey, but the bees seem to think honey-dew is the only thing worth gathering; but for my part I wish they would bring in something else, as I do not like it very well. Will this honey-dew get any better when fully ripened, and what ought it to bring, compared with white-clover honey? We fear we shall have some trouble in getting rid of it, as it is our first year that we have had any honey to sell, and shall have to establish a market for it, which I fear will be no small job with such black stuff. However, I have heard some folks say they liked it very well. Please let me know how it compares in value with other honey.

BUCKBUSH HONEY.

Have you ever seen any pure buckbush honey? If you have not I think I can send you some another year, unless the honey-dew rules it out as it has this year. We had some last year; and although it was quite dark I thought the quality very fine. We have a profusion of buckbush in this section, and I consider it a valuable honey-plant, as it comes at a season when very much needed here. S. E. MILLER.

Bluffton, Mo., July 31, 1886.

Honey-dew is improved by being fully ripened in the combs, like all other honey; that is, providing it is thin and watery when gathered. In regard to the price, I do not know what it will bring—much depends on the quality. I would offer it at about one-half the price of good honey. We have considerable of the buckbush in the garden, and the bees work briskly on it every morning, and have for several weeks; but we have never been able to test the quality of the honey.

WHY WON'T THE BEES ACCEPT A QUEEN?

I have two hives of bees, both swarms from the same hive, and neither of them will keep a queen. One of them I have given seven queens, and the other six; they will raise a queen, or keep one until she is about to lay, and then ball and kill her. There is no fertile worker, as there is no brood except what I give them. They are both strong in bees and honey, but they have no drones; but there is plenty in other hives. I keep them with plenty of brood. Can you give any reason for such actions? Do you think if I would give them a laying queen it would answer? RICHARD EDMUND.

Grand Crossing, Cook Co., Ill., Aug. 13, 1886.

Friend E., the conduct of the two hives you mention is very unusual. I would by all means try introducing a tested queen. Our remedy has been to give a colony plenty of brood and bees from another hive—that is, enough bees to induce the stubborn bees to behave.

CAN SECTION HONEY BE KEPT FOR ANY LENGTH OF TIME?

Can section box honey be kept any length of time? I have a number of 1-lb. sections that I should like to keep till winter, as they do not command a very ready sale now. MRS. E. GAINES.

Milliken's Bend, La., Aug. 10, 1886.

You can keep section honey from now until Christmas, or even later, without any trouble at all, and without any apparent deterioration. As a rule, however, after it gets to be one year old or more it has to be sold at a reduced profit. The only conditions required in keeping it is to have it where it will not become damp, or get frozen. Of course, freezing does not, of itself, hurt the honey. When comb honey becomes very cold, and warmer air passes over it, moisture is liable to condense on the surface of the honey. This sometimes dissolves a portion of the honey and then it becomes sour. Besides, comb honey is liable to candy when kept a year or more, and this, as a matter of course, injures the sale of it more or less.

PLANT-LOUSE NECTAR.

My bees are at work on pond lilies, on the leaves, not on the flowers, and it does not make good honey—at least I do not call it so. I have had quite a number taste of it, and have found only one who liked it. The leaves are covered with black lice; and when the lice are the thickest, the bees seem to work the most. The leaves seem to sparkle like honey-drops after it is dried down. Where does it come from? Do the lice make it, or what is it? It is black, and muddy; you will say so when you get the sample; but it does not look so black when extracted as it does in the comb.

My bees are at work on the hickories some, but not so much as on the pond lilies. There are white lice on the hickories, and the honey is lighter than from pond lilies—at least I think the black is from the pond lilies, for the bees are at work on them more, and I am getting more black honey. The honey which I think comes from the hickories is clear and thick, but it is darker than white clover. I can not extract the light to get a good sample, for I have not got enough of it, so I will send a sample of the black, and will send a pond-lily leaf and the hickory. I should like to know whether the lice on the hickory are the same as the ones that made so much trouble a year or two ago. This is my first experience with that kind of honey, and I hope it will be the last. A. O. QUICK.

Leoni, Mich., July 19, 1886.

Prof. Cook replies:

Dear Mr. Editor:—This is certainly plant-louse nectar. The pond lilies are thickly beset with black aphides, and the hickory leaves with green ones. The leaves also are thickly covered with the cast skins of the plant lice. That this nectar from plant lice is always pleasant and wholesome, as I had thought previous to a year ago, is far from the fact. I am now inclined to the opinion that, when unmixed with honey, it is often bitter and unwholesome. I am sure that, in some cases, I have tasted of a pure article which seemed quite palatable, and to my taste.

You remember what quantities came on the plants from Oregon a year ago. That was very pleasant. I have found the same true of nectar from the elm, cock's comb, gall-louse, and the larch-louse.

Mr. Editor, you have here a good reason to doubt again. Just think how wonderful for these lice to be on pond lilies. How did the colony get to this island home to establish itself? Did the little Lilliput take a swim? and if so, where was the compass to guide him to the desired spot? Again, does the louse work on the upper surface, exposed to the scorching sun, or beneath, to be washed and rinsed and doused at the mercy of the waves? It is the last place we should expect to be pre-empted by a plant-louse; but if to the liking of his louseship, it is certainly a good and safe place.

A. J. COOK.

Agricultural College, Mich., July 23, 1886.

DOOLITTLE'S WAY OF MAKING NUCLEI.

As it is difficult to start nuclei early in the season, I again tried the plan, and in several cases it worked well; but I soon found, as Ernest says, that the old bees in some cases return. I do not believe a safer way could be found to introduce a queen; but in one case after releasing them, the queen, a purchased one, took wing, and the bees began to return; and as they were taken from two hives they were killed when returning to the one, and in the other hive they balled a fine queen and killed her; and then the new queen, not having marked her location well, and it being quite windy, entered another hive, and was also balled. It is safer to release the bees directly on the frames, instead of at the entrance, and should also be taken as far as possible from the hive they were taken from. When plenty of young bees are hatching, I don't think it worth while to bother with the plan. CHRISTIAN WECKESSER.

Marshallville, O., Aug. 2, 1886.

A HOME-MADE SOLAR WAX-EXTRACTOR; ANOTHER WAY TO MAKE THE REFLECTOR.

I see Prof. Cook is going to try to improve your solar wax-extractor, if he can. I have an improvement which is different from any I have yet read of. I made my box by nailing a bottom-board on an upper story of a hive, to make the box close. I made a frame to fit on top loosely, about three inches deep. I cut a groove in both upper and lower surfaces to receive a pane of glass in each side. I got two panes of glass cut to order to fit this frame, for 35 cts. On top of this double-glass frame for a reflector I made a large hopper, the lower part to fit on top of the glass frame closely all round the edge, and not touching the glass. The sides of this hopper are 14½ inches wide all round; bottom, inside measurement, 16×19¾; top, inside measurement, 30×42½ inches; corners beveled to fit. This gives a good slope to all the sides for reflection. I painted the inside a thick white coat; and if you think the inside of that box doesn't get hot on a sunshiny day, you would acknowledge it did if you were to put your hand inside. I arranged some cleats in the box to support a large circular tin pan to hold the wax to be melted. The pan, which is slanted at the lower edge, has the edge pressed down to form a spout. Underneath this spout I place a half-gallon tin vessel to catch the wax. I have several times filled this vessel during the middle of the day when the sun was hottest. The only fault I find with it is that my box isn't large enough square. I do not have enough square inches, yet it does admirably for small meltings. We have so little sun-

shine here in Louisiana that I don't know how many pounds it could melt in a day. If Prof. Cook will make a hopper reflector having the sides wide enough, and pitched a proper slope, and painted white, I think he will be able to concentrate a high degree of heat within the box. I have to handle my pan with a cloth to keep from burning my fingers. C. M. HIGGINS.

Hahnville, La., Aug. 3, 1886.

IS THERE ANY SUBSTITUTE FOR GRAPEVINES AS SHADE?

Would you be so kind as to tell me if there is any shrub or vine besides the grapevine that will shade the hive, and be forage for the bees? Where could I obtain seed or plants, and about what cost?

J. H. S. CRONK.

Burgersville, Ont., Can., July 22, 1886.

Friend Cronk, there are many plants and vines that will answer about as well as grapevines. We prefer grapevines because they are permanent, and also handsomer than any other plant that we know of, besides the fruit they bear. Sunflowers, lima beans, tomatoes trained on trellises, and a good many other plants, are used under certain circumstances.

FASTENING SECTIONS TOGETHER WITH A TWISTED STRING.

Bees are doing exceedingly well. I have never seen so good a honey season. I have been trying friend Doolittle's plan of putting queen-cells in a tunnel-shaped wire cage, and it is a success. I have also been cutting my sections, to let the bees through every section without going back into the brood-chamber; but I don't know yet the result. Can you tell me how to fasten sections close together so as to stay? I have been puzzled a good deal; but I will tell you how I did it. I use 21 sections on a rack. I set 7 in a row, and take a strong manilla string and tie around to hold the glass in, then take a small stick and twist the string as tight as it will bear, and fasten it; and when the 3 rows are completed I set them on a rack and twist a string around the whole and press them together. This keeps them very close together, but it is too much work. E. S. HANSON.

La Otto, Noble Co., Ind., July 5, 1886.

Your plan of tying up sections with a stout string, to hold glass and all together, is quite old, and I believe the objection to it is usually about like yours. See the plans for cases and crates in our own price list and the price lists of other dealers in supplies as well.

DISTINGUISHING DIFFERENT RACES OF QUEENS.

Referring to your conclusion on page 614, that I can not always distinguish the difference in appearance between Carniolan queens and hybrids, I admit it; and, further, I can't always distinguish between Carniolan queens and Italian queens. Furthermore, you know you can not *always* distinguish between Italian queens and our common black queens. The fact that some imported Italian queens are darker and meaner looking than *some* black queens has certainly long ago been established beyond question; and if it has not, I should like to have the pleasure of putting some specimens in your hands, to decide by *appearances*. There are some Carniolan queens with bronze-colored abdominal rings that I have not seen in any other race; there are others raised from the same mother, that I could not distinguish from fine Italian queens, and still others I could not distinguish from our "black" queens. I believe I can not be deceived about a colony of Carniolan *workers*—I am sure I can not. S. W. MORRISON, M. D.

Oxford, Pa., Aug. 2, 1886.

WON'T ACCEPT A QUEEN, BUT BUILD QUEEN-CELLS.

I found a colony that I can not get to accept a queen. I caged an Italian queen in their hive in a Peet cage, and they refused to accept her all the time. They ball her every time she gets out, and I have her to cage again. They build so many queen-cells that I get tired of cutting them out. The second day after I had queened them I found 63 queen-cells on one frame of fdn. There were 49 on one side, and a good many on the other frames that I didn't count. These were blacks, but I don't think your Holy-Land, Cyprians, or any other kind, can beat them building cells. C. F. GRUBB.

Bridge, Davidson Co., N. C., July 1, 1886.

Sometimes a colony of bees seem determined to rear a queen of their own, instead of accepting one. In that case we generally humor them; that is, we often conclude that we shall get along about as fast to let them do it in their own way.

A MACHINE FOR CLEANING PROPOLIS OR WAX FROM THE TOP-BARS OF FRAMES.

I send you a rough model of a scraper to clean wax and propolis from frames without removing them from the hive. The handle is 7 inches long, and the edge 1½ inches long. I took a piece of a saw-blade for the edge and made the pocket of tin, about three inches deep; it will hold all there will be on almost any hive. From 70 hives I got enough to make wax enough to pay for two or three scrapers. If the frames are all wood they will be firm enough to scrape without holding; but if they have metal corners they will have to be held with one hand. If you think this is worth giving to the public, they are welcome to it. JOHN WOOLSEY.

Bedford, N. Y., July 22, 1886.

I will explain to our readers, that the model referred to is a piece of tin, bent in such a way as to make a sort of pocket. The wooden handle referred to is set into the pocket, and fastened by means of wire nails from each side. When you draw it over the top-bar of a frame, the wax and propolis roll up and go into the pocket so as to amount to quite a saving of time. The question now arises, Do we want our top-bars scraped off clean? Many bee-keepers, and friend Doolittle among the rest, say they do not want the top-bars scraped off — at least friend D. said so some years ago when he paid us a visit. If left on, it gives the bees a passage over the tops of the frames; and while there is a honey-yield it will be filled in almost at once, even if scraped off. Of course, these remarks apply to hives where a cloth or enamel sheet is used over the frame. With honey-boards like Heddon's and others' I believe the top-bars are kept clean; and if the honey-board is kept down in place, probably no accumulations are found on the top-bars.

WHY IS SO LARGE A PERCENTAGE OF MY QUEENS NOT FERTILIZED?

Can you tell me why I lose so many queens at about the time they ought to become fertile? Out of 53 apparently good virgin queens, in full colonies and nuclei, all from swarming cells, only 31 became fertile; all the rest disappeared at about the time I expected them to begin to lay. Is this not an unusually large percentage of loss, or is it so with every queen-breeder? I thought for some time the trouble was in the wrong arrangement of my hives; but it seems not to be the only cause. I have my hives in rows, 12 feet apart one way, and 3½ ft. the other way, so arranged that they "break joints." My hives are large chaff hives, each of which has a 2-frame nucleus in the upper story. This gives me many more nucleus hives than I need, so I use only every fourth or fifth. This, I thought, would prevent the young queens from entering the wrong hive; but the result was, that in some nuclei four queens were fertilized, while in others just as many virgins were lost. With full colonies I have about the same trouble.

JULIUS JOHANNSEN.

Port Clinton, Ottawa Co., O., Aug., 1886.

Friend J., your hives are too near each other, and too much alike. See what I say in the A B C book about the importance of having them placed toward the different points of the compass, even when they are 7 feet from center to center. Try one nucleus off by itself for a few days somewhere, and see if you do not get better results; and another time and another season you may have good results just where you are; but I should say that 3½ feet is much too close. The bee-keeper who has well-made, nicely painted hives, is more apt to have trouble in this respect than one who has his bees scattered about in hives of all sorts and sizes, because, in the former case, each hive looks exactly like its neighbor.

RENOVATING FOUL-BROODY HIVES.

Having lost all my bees by foul brood, I melted up and boiled all the honey and wax, and such fixtures as would go into a wash-boiler. My hives being too large, I took a length of 18-inch smoke-stack, set it on end over a grating of iron scraps, scooping the dirt away on one side, for a draft. I then built a fire in it and set one of my hives, bottom up, on top of the pipe, protecting the edges of the hive by a strip of sheet iron laid under them on each side. I regulated the draft by opening and closing it with bits of sod. In a few minutes the hot smoke was issuing from every crevice, and the melted propolis dripping down all around. Some of the hives took fire inside. I threw them right side up on to the ground, and dropped a little water on to the bottom-board, when the hive would instantly fill with steam, and smother the flames. The bees do not seem to dislike the charred wood to live in, and I have found no trace of foul brood among them yet. I got 6 three-frame nuclei from the South about May 15, from which I now have 9 good strong colonies, some of them storing honey in boxes.

HONEY-DEW.

We are having our first experience here with honey-dew. About two weeks ago it appeared on balm-of-Gilead, elm, and burr-oak trees, which dripped so as to smear the sidewalks in places. *Now* the black oaks are covered with it. I find the leaves have a great many little green plant-lice on or under them. I thought I would tell you how, with a few cents and three or four hours' work, I made a machine for perforating frames for wires—capacity 200 strips per hour, but conclude for this time. GEO. H. PATCH.

Stevens Point, Wis., July 19, 1886.

Thank you, friend Patch, for your description of the way you renovated your foul-brood hives. In Our Own Apiary for this issue you will see that we employed a similar plan, only we used steam.

A NEW USE FOR THE SMOKER.

The Williams folks desire me to thank you heartily for the smokers, and so do I. Now I have the job of reading the "Dose of Truth" to them. Although I have always held smoking to be wrong, and chewing too, I never saw such reasons advanced as I find in your pamphlet. I think it should be more generally distributed. The Williamses have found a new use for their smoker; and had I been aware of it two months sooner I would have ordered a thousand or so. I know I could have sold that many. Let me explain: This is a great mosquito country, especially now in the rainy season. Although netting and cheese-cloth bars are in use, they are warm and disagreeable to sleep under. Now, a few rags in the smoker, a few minutes before retiring, set on fire, and the smoke well puffed in all corners, causes the mosquito to leave for that night. Such is also my experience, and I would not now be without a smoker for its cost for a single night.

Fort Ogden, Fla., July 20, 1886. F. SCHINDEL.

THE PROGENY OF MISMATED QUEENS.

I have a dollar queen, one year old, bought of Wm. Cary. All I bought of him with the exception of this one are very nice queens. Her bees are about one-third black, to all appearances, even the old ones, temper not excepted. One-third have two bands, and the other third are very finely marked Italians. This is something new to me, and I should like to know if it is very common, and also how it can be so. 5—H. P. LANGDON, 30—50.

East Constable, N. Y., Aug. 3, 1886.

It is not unusual for mismated Italian queens to produce bees variously marked, from real black bees to three-banded Italians. As a general thing, however, a pure queen mated with a black drone will produce one and two banded hybrids.

BEE-KEEPING IN UTAH.

I am doing what I can in a modest, feeble way, to advance the interests of the bee-business in this village of over 2000 inhabitants. There are at present over 260 colonies of bees here in the keeping of 7 different persons, besides 97 colonies of my own, which are getting too large a number for one little old man in one location to handle. I have therefore laid the foundation of another apiary, located very high up in the mountains, designing thus to lessen my labors here at home. This new location is in the midst of a little world of wild blossoms; one succeeding another the whole summer, from the moment the snow is off the ground in spring until frost cuts down all in the fall. Indeed, I have seen blossoms fully defined and developed, but closely folded, lift their heads throughout the fast-melting snows of spring, and in a minute or two

would appear, while I yet stood wondering at the thing of life, a beautiful and complete wild blossom standing just in the edge of snow. From these wild blossoms bees gather large stores of honey, some of which I will send by mail in a small bottle. This honey was deposited in old combs carried from here in the winter, wherein were some grains of old honey, a few of which you can see in the bottle, so it is not entirely wild honey, but enough so that it shows the peculiar flavor which I wish you to taste and examine; and, if you have no objections, give me your opinion as to its salable qualities among those well used to choice honey. Perhaps what is pleasant to us is not pleasant to others afar off, reared in a different climate.

O. B. HUNTINGTON.

Springville, Utah, July 20, 1886.

Friend H., the flavor is certainly peculiar, and to me it is very pleasant indeed. I should think the honey would command a good price just on account of this flavor. The same, or something quite similar, has been submitted to me once before. If you will send us, say, a couple of the plants, we will have our botanist name it.

A CARD FROM H. CHAPMAN.

Mr. Editor:—It has not been my purpose to say or write much about or offer any seed of my honey-plant, for sale until after the report of the committee appointed by the North-American Bee-Keepers' Association to examine and determine its value as a honey-plant. The committee met at my place July 28th (all but Mr. Manum, of Vermont, who was prevented by unforeseen circumstances). The committee present were A. I. Root, of Medina, Ohio; L. C. Root, of Mohawk, N. Y., and N. W. McLain, of Aurora, Ill. They will make their report as a committee at the next annual meeting of the Association, to be held at Indianapolis, Ind., Oct. 12th, 13th, and 14th. But since the meeting of the committee at my place, members of it have written so favorably of the plant in the bee-journals that I have received a large number of letters of inquiry, requiring so much of my time to answer that I deem it proper, through the bee-journals, to say, I have no seed but the present season's growth, which will not be ready to send out until about the 20th of October next. I purpose to advertise in the bee-journals after the report of committee at Indianapolis. Seed will be sold in half-ounce, ounce, two-ounce, and four-ounce packages. The price will be determined after the report of the committee. All desiring seed are referred to my advertisements, which may be found in all the leading bee-journals in America, after the report of the committee at Indianapolis.

H. CHAPMAN.

Versailles, Catt. Co., N. Y., Aug., 1886.

RATTLESNAKES AN ENEMY TO BEES.

Dear Brother:—The bee-moths got into the weak swarm I had, and they are about used up. I have just put the old combs in the solar extractor, and now have a nice cake of wax. In lifting the hive to move it, the bottom-board stuck to the hive and I found a big rattlesnake coiled up under the hive. The sudden daylight surprised him, and he surprised *me* too; but I recovered myself first, and killed him. I have taken off 100 lbs. of comb honey from my two hives, and the bees are working yet.

THE SIMPLICITY SECTION IN CALIFORNIA.

I took 74 sections into town. Harbison honey is selling at 5 cts. per lb. One of the leading honey-buyers offered me 7½ cts., and said if mine had been whiter he would give me more. One objection is, that on or near the coast the honey is darker than further back. The style of your section is the first they ever saw. Even Mr. Harbison thought they were nice. I am going to hold it for a higher price.

There was a swarm of bees went over the barn today. I thought it was too late for them, or I would have had out some more decoy hives. M. S. ROOT.

San Diego, Cal., Aug. 9, 1886.

Brother Marsh, excuse me for thinking that it was the rattlesnake instead of the moths that injured your weak swarm. We have had several reports of snakes getting under bee-hives and catching the honey-laden bees as they came in, until the swarm was too much depleted to take care of itself. Very likely the moths would come in as a consequence. No wonder you were a surprised lot of you.—I am glad to hear that you are beginning to make modern bee culture "go" a little; but I am greatly surprised to know that so large a city as San Diego should be unacquainted with the one-pound Simplicity section.—I should think it would pay to save absconding swarms in any month of the year in your mild climate.

A SOLAR WAX-EXTRACTOR FOR A NICKEL.

I think I must describe my wax-extractor. It works to perfection, and is cheap. It is taken from your 5-cent counter—a tin wash-basin. Punch the bottom full of ⅛-inch holes; set it in top of a stone-ware butter-jar, and put a glass on top. Throw in the wax scraps. A wooden frame around the glass would keep it from sliding off or breaking easily, but it is not necessary. I also have a wooden cover to the jar, with a beveled hole in the top, which allows the extractor to be tipped toward the sun.

JAMES EVANS.

Schaghticoke, N. Y., Aug. 24, 1886.

Very good, friend E.; but it seems to me that your stone jar and pane of glass ought to count something in footing up the expense of the apparatus. Wouldn't one of our 15-cent strainers answer better than the wash-basin? They are about the size of the basin, with an opening at the bottom, covered with brass strainer cloth. The polished sides of the basin would help to reflect the sun.

CARBOLIC ACID.

In the *British Bee Journal* for Aug. 12, 1886, we find the following:

I have just made my first experiment with carbolic acid, in order to remove a super, and have been any thing but successful. I made a square cage of iron gauze, inserted in it pieces of sponge saturated with the acid, and placed it inside my Bingham smoker, then proceeded to drive the fumes into the super, at the top, but it produced not the slightest effect so far as I could see, for the bees rushed out as fast as they could from between the sections: and when, after waiting a short time, I removed the super, my hands, though perfumed with Calvert's No. 5, received more stings than they have enjoyed for a long time. I had on a veil, or I should hardly have been able to see to write this. I am greatly disappointed, as I had looked forward to getting rid of the trouble of the smoker, with the inconvenience of its frequent extinction.

J. COVE JONES, *Loxley, Warwick.*

This accords very well with Mrs. Chad-

dock's experience in a late issue. May be, however, that both of the above parties have failed to comply with all the conditions required. We have ordered one of the smokers from the inventor, and will report promptly as soon as it arrives. We are informed that it is now on the way.

HOW MUCH SHOULD BE FED A COLONY DAILY DURING A DROUGHT?

Bees were held back by a drought of some 60 days. But three very heavy rains have turned the tables. Does it pay to feed continuously straight through such a drought? If so, how much per day, per colony, etc.? W. M. BOMBERGER.

Harlan, Iowa, Aug. 2, 1886.

Friend B., I think it does pay to feed continuously right through a drought, especially if you wish to increase the number of your stocks. I do not know how you are to give a definite quantity of bee-feed daily, so much depends on the strength of the colony, and they almost always get more or less from the fields. The thickness of the syrup has also something to do with it. I would suggest a teacupful a day of syrup containing about twice as much water as ordinary honey; that is, if I used honey for feeding I would dilute it first with an equal quantity of water, especially if I wished to promote brood-rearing.

REPORTS ENCOURAGING.

A GOOD YIELD; ARE BEES APT TO DIE IN WINTER AFTER A HEAVY HONEY-FLOW?

I STARTED with four colonies of bees this spring, and from three frame hives I have taken 250 lbs. of comb honey, and they have 32 sections more, nearly filled, apiece. My box hive has filled only two boxes, about 20 lbs. This has been a wonderful season for bees here. I went according to your instructions in the A B C book, and kept my bees at work by lifting up the bottom and driving them in and giving them more room whenever they began to hang out; and the consequence is, that I got a good deal of honey and only two new swarms; but if I can sell my honey for what it is worth I will buy bees by the pound in the spring. Honey is selling for 12½ cts. for comb, and 8 cts. for extracted. Every one's bees have done well, especially those in frame hives. I took 150 lbs. from one hive (hybrids), and still they are at work. There is a great deal of buckwheat sown this year, and we expect quite a little honey from that. Last year was so wet that bees did scarcely any thing except to gather pollen and raise bees; and there was such a rank growth of heart'sease and late honey-producing flowers that the average loss during the winter was about 1 in 30. Now I wish to ask you if next winter will not be pretty hard on bees on account of the great amount of work they are doing this summer? and what shall we do to make our colonies strong for winter? I have an idea that, when there is a great flow of honey, bees do not raise so many young, and that those that remain in the hive during winter are more or less exhausted from field work, and would die before spring, and leave the colony so weak that it would die.

L. W. RICH.

Lamont, Buchanan Co., Ia., July 27, 1886.

Friend R., I do not think bees are more apt to die after a heavy flow of honey, but, rather, to the contrary. The Italians will, however, fill their combs to such an extent as to prevent brood-rearing where room is not given them in which to store their surplus honey. But bee-keepers nowadays are seldom known to neglect giving the bees storage room when honey is coming.

$7.00 CLEAN CASH FOR A SINGLE CRATE OF HONEY.

I have kept bees for quite a number of years, and never saw a movable-frame hive until last spring, and then I made it myself. Mr. E. H. Cook, of Andover, Conn. (of course, you have heard of him, for he has sent you a good many orders for goods, and a tiptop upright honest man too), sent me the dimensions for making the L. hive, and then I bought two tested queens from him, and had him come and transfer my blacks into the movable-frame hives for me. I find I can get some good honey now which I never could do in the common box hive; and, furthermore, I never sold a pound of honey before I had my bees transferred; but now I can sell all the box honey my bees can make. There was a merchant who came to my house last Tuesday to buy some honey of me, and I took a section case off from one of my hives, and he gave me $7.00 in clean cash for it. That was 25 cts. per pound for it, and he wanted all I had to spare this season at the same price.

L. I. WALDO.

Merrow, Tolland Co., Conn., July 30, 1886.

350 LBS. OF HONEY FROM ONE COLONY.

Bees have done well up to date, but I think the honey season is over. Best yield from one swarm, extracted honey, to date, 350 lbs. SAMUEL LISTER.

Newton, Iowa, July 12, 1886.

REPORTS DISCOURAGING.

JUST PULLING THROUGH.

BEES are just pulling through. I shall have to feed sugar to winter them, if they don't do better. I am out nearly $100 this year; and if I had to look to the bees for it, I never could make a start in the way of paying my debts. But, thank the Lord, I have more than bees to look to. A. L. LIGHT.

Groveland, Ark., Aug., 1886.

LESS THAN 100 LBS. FROM 20 COLONIES.

The honey crop amounts to nothing with me this season. Out of twenty colonies, spring count, I got less than 100 lbs. of honey, and I shall have to feed several hundred pounds of sugar for winter. I now have 39 colonies in a thriving condition, and am not a bit discouraged. L. H. ROBEY.

Worthington, W. Va., Aug. 4, 1886.

A POOR SEASON IN ENGLAND.

This has been a very bad season for business, as June was so very cold. C. N. ABBOTT.

Fairlawn, Middlesex Co., Eng., July 21, 1886.

NOTES AND QUERIES.

BEES NOT WORKING ON BASSWOOD.

THE honey season has been a good one here, but is just about closing, owing to dry weather. I have three basswood-trees in my yard; but this year the bees paid them very little attention. This surprised me some, as the trees were never fuller of bloom.

Woodstock, Ill., Aug. 2, 1886. A. W. CUMINS.

CHAPMAN HONEY-PLANT.

Chapman honey-plant lasted only from July 20 to Aug. 10. Rocky-Mountain bee-plant is still in bloom, and will be till frost. A. J. COOK.

Agricultural College, Mich., Aug. 17, 1886.

HOW TO KILL CANADA THISTLES.

The easiest way to kill Canada thistles is to cut them low in the ground, and pour about a gill of coal oil on the stump. This treatment has succeeded well in Northern Indiana, where the seeds are brought by cars from Canadian railroads.

Vincennes, Ind., July 17, 1886. E. BURKE.

A CORRECTION.

In Aug. 1 GLEANINGS, p. 620, I was surprised to see in my article, 6th line, "Cast skins of spiders;" it should be "Cast skins of aphides." This showed that lice had been there. I like the solar wax-extractor *very* much. A. J. COOK.

Agricultural College, Mich., Aug. 4, 1886.

TWO QUEENS IN A CELL.

I send you by this mail a curiosity. A queen-cell I had put into a nucleus did not hatch; and on opening it I found two full-grown queens. Was this ever known before? What made them die?

Bristol, Vt., July 4, 1886. E. O. TUTTLE.

[I think we have had reports before of two queens in a cell. Probably they died because there was not sufficient nutriment or sufficient room for both of them.]

SHALL WE SUPERSEDE QUEENS WHEN THEY ARE THREE YEARS OLD?

I have a nice queen that will be three years old in August. I have been advised to supersede her on account of her age. Shall I do it? S. R. FUSON.

Rockville, Ind., July 12, 1886.

[Friend F., I would supersede any queen that did not keep her brood-nest full, no matter what her age; and I would keep any queen that *did* keep her brood-nest full, no matter what *her* age; that is, I would not destroy any queen because she happened to be so many years old. Make her *work*, rather than her *age*, decide the matter.]

BLACKS WORKING ON RED CLOVER.

I have seen the blacks working on red clover as thick, seemingly, as the Italians. There was lots of buckwheat in blossom too. Are the Syrians, Holy-Lands, and Palestines all the same race of bees, or are they all different races? White clover and basswood were injured by the dry weather a good deal here; basswood lasted only about five days.

CLARENCE W. BOND.

Jackson, Mich., Aug. 16, 1886.

[Friend Bond, the Syrians, Holy-Lands, and Palestines are so nearly alike that we might as well call them one and the same thing, although the bees from certain localities give much better results than those from other localities.]

SEPARATORS NOT A PREVENTIVE TO QUEENS LAYING IN THE SUPERS.

I have a number of times found brood in sections where separators were used, so nearly as often as when they were not, that I have about decided that separators or no separators makes but little difference. This matter of brood in sections has become such a nuisance to me that I am going to use queen-excluders pretty generally. GEO. F. ROBBINS.

Mechanicsburg, Ill., Aug., 1886.

OUR OWN APIARY.

AN IMPROVEMENT IN CHAFF-HIVE COVERS.

JUST after the honey-flow we have always been annoyed by a few stray robbers tugging at the ventilators of the chaff-hive covers. At such times there are a few bees which seem to persist in minding every one's else business but their own; and whenever a hive-cover is raised they will dart down into the hive. Situated as we have been with foul brood in our apiary, a few such bees could do a vast amount of harm. Passing through the apiary one day I felt particularly vexed to see a lot of these shiny-backed fellows trying to pass through the ventilator-holes to the chaff hives. It is true these holes were covered with wire cloth on the inside; but why should those bees try to get through it? I then remembered that bees will feed each other through wire cloth. It was evident, that the inmates of the chaff hives were feeding the robbers on the outside through the wire cloth, otherwise the little lovers of ill-gotten gains would have gone home. I accordingly instructed the apiarist to tack wire cloth on the *outside* of all the chaff-hive ventilator-holes in the apiary. This would make $\frac{3}{8}$ of an inch space in each ventilator, between the strips of wire cloth. When the chaff-hive covers had been so fixed, the result was very satisfactory; for not a robber would bother himself with those ventilators; in fact, we have wondered why we had not done it before. Try it, brother bee-keepers, and note the results.

We are sometimes annoyed by bees getting under the covers of Simplicity hives; and it has occurred to me, Would not this trouble be aggravated if the union of the cover and body were made by simply a plain unbeveled edge? The beveled edge of the Simplicity will permit of considerable warping of both body and cover, and yet not permit any robbers to get into the hive. Where plain edges meet it has seemed to me that a very slight degree of warping would start robbers. I may be mistaken. Perhaps some one can inform me to the contrary or otherwise. The plain edge possesses some very important features, I am well aware; but I will not take time to mention them here.

THE SIMPSON HONEY-PLANT.

Whatever may be said in praise of the Chapman honey-plant, it would be hard to excel the Simpson in many respects. The bees have been roaring on our patch from morning till night ever since the fore part of July. If you should stand at the end of one of the rows you might see hundreds—yes, thousands—of bees flitting around the little cup-shaped blossoms. Is there any sweeter sound to the bee-keeper than the happy hum of his little servants? How different from the roar when bees are robbing! When I take visitors down to see our carp-pond I always take special pleasure in showing them our patch of Simpson honey-plants. The Chapman honey-plant may yield more honey in a short space

of time; but as the Simpson honey-plant continues yielding for two or three months, the aggregate amount of nectar secreted by the latter might equal that of the former. I have thought some of covering a whole Simpson plant with mosquito netting, and allowing it to remain for two or three days. At the expiration of the time, would the cups be running over? I would have tried the experiment, but our plants are from 6 to 10 feet high, and it would be a rather difficult matter to completely cover the plant, branching out as it does like an evergreen. It just occurs to me to put one of our folding tents over a small plant. Well, I will tell you the results next time.

BEES WORKING ON BUCKWHEAT.

Three weeks ago we planted about three acres of buckwheat; and to-day, Aug. 27, it is in blossom, and the bees are working on it at a pretty good rate. I noticed the same happy roar, of which I spoke a moment ago. About 10 A. M., on account of the large number of colonies in this locality, the bees stop work and commence early the next morning.

POLLEN AND MUDDY WATER.

Pollen-gathering continues the whole day. This, together with the buckwheat in the morning, keeps the bees in our apiary just now out of mischief. Yesterday, the 26th, about 2 P. M. I noticed the bees going in great droves south of the apiary. I was not certain whether they were working on the corn or getting water from the creek running about 200 yards from the apiary. Starting in the direction the bees were flying, I found that they were sipping at the muddy water in the creek, in large numbers. No doubt the large amount of pollen being gathered necessitated a good supply of water. As we have been obliged to discontinue the sale of queens since the first appearance of foul brood, we have none but laying queens. The consequence is, that brood-rearing is being carried on more extensively than ever before. It is, therefore, nothing strange that the traffic in pollen and muddy water is brisk.

UNITING SO AS TO MAKE THE BEES STAY IN THEIR NEW LOCATION.

In the evening, when the bees are all in the hive, we unite the two in the ordinary way. At the time we do this we reserve a frame of unsealed brood, and place it back in the hive whence it came. This is done to catch a good many of the old bees, which will be sure to return to their old location. Said bees and the frame of brood are allowed to remain in their old home from 24 to 48 hours, during which time the new order of things, together with the loss of their queen, seems to disconcert them and puts them in a condition to accept any circumstances whatever. At the expiration of a day or so this frame of brood and bees are put back in the colony in the evening where they were first placed. We find in practice that this second returning is pretty sure to make all the bees stay, though sometimes perhaps a dozen old worn-out fellows (not much use) are so wedded to their old home as to go back again even then.

When uniting into chaff hives we find it quite an advantage to put all the bees of the new colony on combs in the upper story, just above the colony already occupying the hive. The brood is placed below in the body of the hive. It will then be a couple of days before the bees in the upper story will go below. When they do they will be more apt to stay in their new location. The returning bees are then caught as before.

HOW WE DISINFECT CHAFF HIVES BY STEAM.

Shortly after foul brood broke out among our bees we had about a dozen chaff hives which had contained diseased colonies. These were set in a row, conveniently located to a steam-pipe. In the evening I donned an old apron belonging to one of the saw-room hands, and proceeded to business. Having attached about ten feet of rubber hose to the aforesaid pipe I shoved the hose through one of the ventilators of one of the hives. The hive-cover was thus permitted to fit tight, and the only exit for the steam was at the extrance — the steam passing from the top of the hive to the bottom. With a boiler pressure of 50 lbs., I let each hive in turn roar and steam from 15 to 20 minutes. In one instance I approached a hive immediately after thus steaming, and raised the cover, being a "lettle" curious to see how hot it was inside. When the scalding vapor puffed into my face and on my hands, I didn't say any thing—no, not so much as "ouch;" but that cover went right back on to the hive, and that right speedily too. I then concluded if the germs of foul brood (if there were any in the hive) were submitted to such a dose as this for 15 whole minutes that they ought to die; if not, they were exceedingly tough. At any rate, if boiling water will kill the disease, I am morally certain *these* hives were disinfected. However, as we have tried to follow the policy of not running any *possible* risks, we shall not put bees in these hives in our home apiary. We propose to use them in an apiary which we intend to locate next year away from home, where we will run more especially for honey. If these hives should give the disease there among a few colonies, no very great damage can be done.

FOUL BROOD UP TO DATE, AUG. 31.

In spite of us, as stated in another column, a few more cases have developed. However, when the apiary was last gone through, only one diseased colony was found, and that was in the very early stages. ERNEST.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: $1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, SEPT. 1, 1886.

If ye abide in me, and my words abide in you, ye shall ask what ye will, and it shall be done unto you.—JOHN 15: 7.

WE have to-day, Aug. 31, 5887 subscribers — a gain of 73 over last month. Many thanks, friends, for your kind support.

A YEAR OF GLEANINGS FOR 15 CENTS.

ALTHOUGH we have sold a good many, we still have a large stock of bound volumes of GLEANINGS for 1876, of which we told you about on page 595. We will dispose of them for 15 cts. each, or 25 cts. by mail postpaid.

FOUL BROOD, AND ONE OF THE DIFFICULTIES IN GETTING RID OF IT.

ON page 700 of this issue, friend Long tells us that a good flow of honey may cover up the honey in the hives containing foul-brood germs, so that it will disappear for some time. When this new honey is consumed, however, so that they get down to the old honey in the bottom of the cells, foul brood makes its appearance again. Now, with such a state of affairs I can hardly understand how phenol or any thing else can reach the whole of the trouble. Throwing the honey out of the combs and scalding it, then making the bees clean up such combs and consume the honey before they commence brood-rearing again, might do it; but is it not about as cheap, all things considered, to destroy all combs with their contents, when it is known positively that foul brood is in the hive?

MR. THOMAS HORN.

WE are sorry to be obliged to say, that, up to date, Mr. Horn has done nothing toward making his promises good; and, so far as we can learn at present, nothing can be recovered from him by legal means. A few of the friends have seemed to think we ought to hold ourselves responsible because we admitted him into the advertising columns of our journal. Inasmuch as he was responsible, and was so spoken of by his bankers at the time we received his advertisement, we do not feel called upon to make these losses good. Where a man fails by misfortune, or even by deliberate plan, it is quite a different matter from one who gets into the advertising pages of a reliable journal by the carelessness of its proprietors, and thus victimizes its readers. In the case of Mr. Horn, it seems to us that we took all reasonable precaution to find out about him before we received his advertisement; and let it be remembered, that he did business squarely and honorably for a good many months.

ITALIAN BEES IN IOWA.

60c to 85c per lb. Queens, 30c to $1.75, according to kind and time. Also bee-supplies and honey. Order from free circular. **"How to Raise Comb Honey,"** an illustrated pamphlet, just out, price 5 cents. Address OLIVER FOSTER,
13tfdb Mt. Vernon, Linn Co., Iowa.

FOR SALE CHEAP.

100 Simplicity chaff hives, good as new, all painted white; about 1500 combs (nearly all worker), 100 chaff pillows; 100 surplus hives; 100 division-boards, 40 of which are feeders; 100 "Hill's device;" honey-tank holding 1100 lbs., lined with tin; extractor; 100 enameled cloths; 40 colonies of bees, with stores enough for winter. Will sell the whole, delivered on board of cars, for $300; cost me $800.
17d R. W. KEENE, Croppers, Shelby Co., Ky.

4 H.-P. ENGINE FOR SALE.

A Bargain for the man who is in need of a First-Class Engine and Boiler.

This is one of B. W. Payne & Son's Eureka engines, the same that we advertise in our catalogue. It has run 3 months since it was new; has had a 10-foot galvanized-iron smoke-stack added, and is in perfect running order. The man who is holding it had to put in a larger one to meet the demands of his trade. The price of a new engine and boiler complete, no stack, is $275.00; but to make a quick sale we will sell this one with the stack for $225.00, free on board cars at Higginsville, Mo.

A. I. ROOT, MEDINA, OHIO.

STORE-KEEPERS, LOOK HERE!

"HANDY" POSTER HOLDER. Takes the place of tacks, paste, and pins. By mail, 1 pair, 5c.; 3 pr., 10c.; 5 pr., 15c.

"ACME" PAPER HOLDER; to be put up on the outside of the house, for the newsboy to slip the daily into to keep it from blowing away; on the inside, to hold the last paper until you can get it read through (holds any small article, as towel, handkerchief, pamphlet, magazine, almanac, etc.); in a lawyer's office, to hold deeds, abstracts, envelopes, letters, papers of all kinds, etc.; in all kinds of mill and store offices, to hold any small flat article; and on the inside of the gate, to hold the mail the neighbor brings from the postoffice. Made of a coil of galvanized spring-steel wire. Get one and try it. By mail, 10c.; two, 15c.; five, 25c.; twelve, 50c. Send for terms to agents. Address **N. E. JOHNSON, MEDINA, O.**

GERMAN CARP FOR SALE.

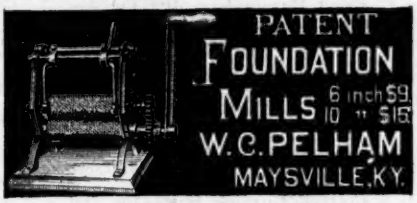
SPAWNERS AND SPRING HATCH.

Correspondence Solicited. Address 17-18d
DR. S. E. ADAMS, Spring Hill Park, Peoria, Ill.

FOR SALE!

350 acres good table land, ½ cleared and in a good state of cultivation; the rest tolerably well timbered; finely situated for stock, fruit, or grain farming; an abundance of fruit and good spring water; good house with 9 rooms, garret and cellar, a large barn, and other necessary buildings. Price $7000.

Also 500 acres adjoining the above, 50 acres cleared, a log house and stable, some fruit, 200 acres of mountain land; the rest nice for farming. Price $3000. Either farm will divide well, and is a good site for an apiary. For particulars address
17-21db H. J. STREBY, Paw Paw, W. Va.



17-18d

FOR CHEAP BEES, see my ad't in July 1 No., p. 526
17d H. M. MOYER, Hill Church, Berks Co., Pa.

BARGAINS IN SMOKERS.

50 new 3-inch King Smokers, latest style, **best materials;** former price, $1.50; will be sold for **only $1.00** each. **Guaranteed perfect.** Send before they are all gone. **A. J. KING,**
17tfdb 51 Barclay St., New York.

Headquarters in the South.

FACTORY OF BEE-HIVES, ETC.

EARLY NUCLEI, ITALIAN QUEENS.

17tfd **P. L. VIALLON, Bayou Goula, La.**

FOR SALE. 60 TWO-STORY SIMplicity hives of mixed bees, complete, for partly comb and extracted honey. Combs built mostly on fdn. in metal-cornered wired frames; honey-house 16 by 24, new, and 10 acres of land. Also one acre of land as building-lot. Price $600. 1719d AUG. LEYVRAZ, Francis, Fla.

DISSOLUTION NOTICE.

Notice is hereby given, that the partnership heretofore existing between E. M. Kennedy and R. B. Leahy, manufacturers of and dealers in apiarian supplies, has been this day, by mutual consent, dissolved, E. M. Kennedy retiring. All liabilities of the firm are payable by R. B. Leahy, and all bills due the firm are payable to R. B. Leahy, who now owns and controls the business.

ELI M. KENNEDY,
R. B. LEAHY.

Higginsville, Mo., Aug. 25, 1886.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or $2.00 per annum, when given once a month, or $4.00 per year if given in *every* issue.

$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or $2.00 per year.

Those whose names appear below agree to furnish Italian queens for $1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for $1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.
*H. H. Brown, Light Street, Columbia Co., Pa. 1tf
*Paul L. Viallon, Bayou Goula, La. 13tfd
*S. F. Newman, Norwalk, Huron Co., O. 13tfd
*D. G. Edmiston, Adrian, Len. Co., Mich. 11tfd
*S. G. Wood, Birmingham, Jeff. Co., Ala. 13tfd
*E. Kretchmer, Coburg, Mont. Co., Iowa. 11tfd
Ira D. Alderman, Taylor's Bridge, Samp. Co., N.C. 13tfd
*Jos. Byrne, Ward's Creek, East Baton Rouge Par., La. 11tfd
J. W. Winder, Carrollton, Jeff. Par., New Orleans, La. 3tfd
*E. Burke, Vincennes, Knox Co., Ind. 3-1
S. M. Darrah, Chenoa, McLean Co., Ill. 7-17d
S. H. Hutchinson & Son, Claremont, Surry Co., Va. 7-17d
*N. E. Cottrell, Burdick, Porter Co., Ind. 7-17d
C. C. Vaughn, Columbia, Tenn. 15tfd
*J. W. Keeran, S. E. cor. Mason and Mouiton St., Bloomington, Ill. 15tfd
D. A. McCord, Oxford, Butler Co., O. 9-19d
J. B. Hains, Bedford, Cuyahoga Co., O. 15tfd
C. P. Bish, Petrolia, Pa. 15 19

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.
P. L. Viallon, Bayou Goula, Iberville Par., La. 15tfd
C. W. Costellow, Waterboro, York Co., Me. 1-23
R. B. Leahy, Higginsville, Laf. Co., Mo. 15tfd
E. Kretchmer, Coburg, Montgomery Co., Ia. 15tfd

Barnes' Foot-Power Machinery.

Read what J. I. PARENT, of CHARLTON, N. Y., says — "We cut with one of your Combined Machines last winter 50 chaff hives with 7 inch cap, 100 honey racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee hives, etc., to make and we expect to do it all with this Saw. I will do all you say it will." Catalogue and Price List Free. Address W. F. & JOHN BARNES, 68 Ruby St., Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT.
23tfd

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 3tfbd

CARNIOLAN
QUEENS & BEES A SPECIALTY.

Send for Descriptive Price List and Circular.

9tfd H. F. SHANNON, Clarksburg, (Formerly of Spring Hill.) Decatur Co., Ind.

BEE-HIVES,
One-Piece Sections, Section Cases, Frames, &c.,

OF SUPERIOR WORKMANSHIP, FROM

SMITH & GOODELL,

Manufacturers of and Dealers in

APIARIAN SUPPLIES,

ROCK FALLS, WHITESIDE CO., ILL.

3tfd *Send for Price List.*

MY 18TH ANNUAL PRICE LIST OF ITALIAN, CYPRIAN, and HOLY-LAND BEES, QUEENS, NUCLEUS COLONIES, and APIARIAN SUPPLIES, sent to all who send me their name and address.
10 11tfd *H. H. BROWN, Light Street, Col. Co., Pa.*

FARM OF 57 ACRES, AND APIARY OF OVER 100 COLONIES OF BEES FOR SALE.

15tfdb GEO. A. WRIGHT, GLENWOOD, SUSQ. CO., PA.

QUEENS.

I have them, bred from a best selected queen of Root's importation, 90 cts. each; 6 for $4.50. I can give all orders immediate attention, and ship by return mail. Send postal for dozen rates.
10tfdb B. T. BLEASDALE,
596 Woodland Ave., Cleveland, Ohio.

FOR SALE. I will sell full swarms of Italian bees during this month for $5.00 each; two for $9.00, or five or more at one order at $4.00 each. They are in new 10 frame L. Simplicity hives, and in good winter shape, ready to ship by return express; good covers and bottom-boards go with the hives. Safe arrival guaranteed. Send money by registered letter.

Address M. R. NICHOLS,
15tfdb Weaver's Corners, Huron Co., O.

SURE TO SEND
FOR MY NEW
PRICE LIST FOR 1886,
Before purchasing your **Bee-Supplies.** Cash paid for Beeswax. 7tfdb
A. B. HOWE, Council Bluffs, Ia.

MUTH'S
HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES,
HONEY-SECTIONS, &c., &c.
PERFECTION COLD-BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,
CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 1tfdb

FOR SALE. PURE ITALIAN Bees & Queens.

Untested queen, $1.00; two or more, 75 cts. each. Tested queens, $2.00 each. Full colonies, in Simplicity hive, with tested queen, from $4.00 to $10.00. Three-frame nuclei, with untested queens, $2.00; with tested, $3.00. For July, August, September, and October, address or call on

Residence, Little Muskingum. BENJ. J. COLE,
16d Marietta, Wash. Co., O.

KIND WORDS FROM OUR CUSTOMERS.

Have received the 500 sections all right. I never saw a *nicer* lot. G. W. CANFORT.
Bloomingburg, N. Y., July 16, 1886.

The goods came in A 1 condition, and please me very much. I can hardly imagine how I got along without the wheelbarrow; while the same scale which you sent costs *here* $2 more.
Verdugo, Cal., June 27, 1886. G. B. WOODBURY.

PLEASING.

Please, sir, would you please to be so kind as to please to send me a *honey-jumble* by mail, if you please? C. C. MILLER.
Marengo, McHenry Co., Ill., June 23, 1886.

OUR REVERSING DEVICE PLEASES.

I now have about 200 pairs of your reversible wires in use, and like them very much. I send order for another 100 pairs. LEWIS P. BILLINGS.
Bloomington, Ill., July 31, 1886.

Thank you for sending journals so promptly, though not prepaid. Your faith in men's honesty must embrace all mankind, and reach right around the world. J. WOOD.
Ohaupo, Auckland, N. Z., May 19, 1886.

The goods came all in good shape. Every thing gives so good satisfaction I can not praise any one thing in preference to the others, unless it be the carpenter's level for 50 cts., which is a thing of beauty indeed for so small a sum of money.
G. E. HUTCHINSON.
Rogersville, Mich., July 29, 1886.

Allow me to thank Ernest for the work he is doing in GLEANINGS, and ask him to continue to tell us about "Our Own Apiary." I believe now that the best bees in the world are pure Italians, and that we shall have to continue to import them from Italy to keep them the best. W. W. WILSON.
Puerta Principe, Cuba, July 9, 1886.

"FOUNDATION JUST BOSS."

The queen came to hand in good shape. I introduced her at once, and she is now laying. The Peet cage is just the thing. That foundation I got of you is just "boss." I am well pleased.
Troy, W. Va., June 26, 1886. PERRY HANSFORD.

HOW THOSE GLASS HONEY-PAILS SUIT.

I am so well pleased with the little honey-pails, that my wife says she must have some more, as they are so nice to use for jelly as well as honey. The last goods received of you came on time, and in excellent shape. GEO. F. BRONDIGE.
Holly, Oakland Co., Mich., July 3, 1886.

THAT IMPORTED QUEEN.

Thanks for your promptness in sending me the imported queen. The order was sent June 24, and the queen was received on the evening of the 26th. I introduced her successfully; and on Monday morning, at the first examination, I found her not in the least bashful, but settled right down to business. I now have cells under way for queens.
Ashley, O., July 1, 1886. ELIAS COLE.

KIND WORDS OF SYMPATHY FROM HAYHURST.

Dear Bro. Root:—GLEANINGS for Aug. 1st is just received. I regret very greatly to learn from it of the trouble in your apiary; it most certainly is a great calamity. I have no doubt, however, that you will soon clean up your yard. Your manly courage in applying the heroic treatment is to be especially admired. E. M. HAYHURST.
Kansas City, Mo., Aug. 2, 1886.

THOSE CHAFF HIVES.

The ten chaff hives that you shipped me July 29th are received, and I have them nailed up and painted one coat, and I can say truthfully that it was as nice a lot of material as I ever had the pleasure of nailing together. I should like to have as many more, but will have to get along with what I have, as my honey-crop was rather short—only about 800 lbs. from 25 hives, spring count; increased to 37. D. J. SPENCER.
Hartford, Ohio, Aug. 9, 1886.

I received the basket of smokers, saws, mandrel, and flies, in good order. I am very much pleased with them. The saws run very easily and work nicely. ALMON TOWER.
Lincoln, Neb., June 21, 1886.

THOSE NICE SECTIONS WE MAKE.

Those were the nicest sections you sent me that I ever saw. It puzzles me to know how you cut them so smooth. The Simplicities take the lead as far as I have seen. My bees are doing splendidly this season. I wintered 20 stands in Simplicity hives, outdoors, without the loss of one, which I thought good luck, not good management, for they had it all their own way. W. M. WILSON.
Huron, Kansas.

HOW OUR VEILS ARE GIVING SATISFACTION.

Brussels netting is the best, for the meshes are nearly round, hence are not so injurious to the sight, and it is but very little obstruction to the sight. I have hurt my eyes by using the common veiling. I think you should call special attention to it in one of your editorial notes; and if there is any thing yet still better, let us have it, at almost any price, and I think you would be doing service to the afflicted, and save many from affliction.
E. B. MORGAN.
Cleveland, Lucas Co., Ia., July 8, 1886.

I saw on the wrapper of my last GLEANINGS, that my subscription has expired, and also wished to know whether it gave satisfaction or not; and in reply I can say with a truth that I heartily indorse it, and also the manner you do buisness, so far as I am acquainted with it. I have dealt with you for the past three years, more or less, and in every transaction you gave entire satisfaction. I am one of Delos Staples' subjects to the tune of one dollar, but I don't ask you to pay me for his rascality.
G. W. CRETORS.
Cutler, Carroll Co., Ind., June 28, 1886.

I received my last copy of GLEANINGS last week, with a wrapper as usual, with extra printing on the outside, stating that my subscription expired this month. That is correct. Many thanks for your promptness in thus notifying us; and I must say that I for one have been privileged for one whole year to read a journal so full of interesting and useful instruction, and so free from slang and corruption. I am 43 years old, and this is my third year with bees. I love to work among them.
LEVI HILDEBRAND.
Hancock, Pottawattamie Co., Ia., June 26, 1886.

HOW TO MAKE THE QUEEN LAY DRONE-EGGS.

The queen you sent me came in good shape, and is a good layer; but she would not lay me any drone-eggs, so I put black brood in her hive until she thought (I think) she would have to swarm, and then she commenced laying in drone-cells; then I took the black brood away from her. I keep her colony rather light in numbers, for I do not wish her to swarm. I was pleased with my 15-cent vise. It was just what I wanted.
Mineral Point, Mo., June 28, 1886. O. F. BEAL.

HOW GOOD IT IS.

I received the A B C book all right. It is a beautiful book, inside and out. After I have read and studied it I will say how good it is. I am just a beginner in bee-keeping. When I understand better what I want I shall need many of your implements in bee culture. I started with one colony this last spring. The 1st of June a swarm came out and clustered in two places. We had provided only one extra hive, so we hived the small bunch in a nail-keg and the large bunch in the hive. The queen was with the small bunch. The others went back, and in two days came out again. I rehived them, and they went to work. Then I thought I need not watch for a time. So next day, out came another large swarm. I then resorted to another nail-keg. Too bad, isn't it? I could not get any hives made sooner than now, and they will cost $2.50 each. White clover began to appear in this section three years ago, and now some pastures are white with it.
FLORA K. SMITH.
Griswold, Cass Co., Ia., July 8, 1886.

HONEY COLUMN.

CITY MARKETS.

ST. LOUIS.—*Honey.*—Honey moves remarkably slow. Choice white-clover honey, in sections, 1 lb., salable at 10c, but holding for 11@12, as to size of lots. Good fair comb, in irregular packages, 8@9c. Extracted, white clover, in tin cans, held at 7c; salable at 5@6. In bbls., slow at 4@4½; kegs 4½@5. Dark strained honey, in bbls., 3@3½, for manufacturing purposes. *Beeswax.*—Selected, 25c. Mixed, as it runs, 22@22½c.

Aug. 23, 1886. WESTCOTT & HALL,
108 and 110 Market Street, St. Louis, Mo.

CHICAGO.—*Honey.*—Demand for honey continues to be light, even at the low prices prevailing here—12@13c for best grades of one-pound sections. The offerings in houses who never received a case of honey until this season are large; and as they have not an established trade they are cutting prices. Extracted, unchanged.

Aug. 21, 1886. R. A. BURNETT,
161 So. Water St., Chicago, Ill.

KANSAS CITY.—*Honey.*—The market is active, and sale of comb is large. Extracted is firm, with no stock in the city. We quote to-day: White clover, 1-lb. sections, 13@14; same in 2 lb. sections, 11@12; dark, 1-lb. sections, 11@12; same in 2-lb. sections, 8@10; California white sage, 2-lb. sections, 10@11; California dark, 2-lb. sections, 8@9. Extracted, white clover, 7@8; dark, 4½@5½; California white sage, 5½@6; dark, 4½@5. *Beeswax*, 20@22.

Aug. 23, 1886. CLEMONS, CLOON & CO.,
Cor. 4th and Walnut St's., Kansas City, Mo.

CLEVELAND.—*Honey.*—The market is unchanged since our last report. Best 1-lb. sections of white sell slowly at 14c; 2-lbs. slow at 12@13. Old honey not wanted at 10@11. Extracted, 6@7. *Beeswax*, 25.

Aug. 21, 1886. A. C. KENDEL,
115 Ontario St., Cleveland, Ohio.

DETROIT.—*Honey.*—The market for comb honey is very good, and a good many sales have been made. Best white in 1-lb. sections, 14c. *Beeswax*, firm at 24c. M. H. HUNT,

Aug. 23, 1886. Bell Branch, Mich.

BOSTON.—*Honey.*—We have had a small lot of new honey, and it sold from 14@16c, with good demand.

Aug. 23, 1886. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

FOR SALE.—3000 lbs. superior white-clover and basswood honey in 1-lb. sections, delivered aboard cars at Dixon, for 12c in 24 or 48 lb. crates. 17-18
W. H. SWIGART, Dixon, Ill.

FOR SALE.—3000 lbs. extracted honey, in 10-gallon kegs; 115 lbs. net; 7c for white clover; 6½ cents for raspberry. M. ISBELL, Norwich, N. Y.

FOR SALE.—5000 lbs. of choice white honey—½ each of comb and extracted. The comb is in 4¼×4¼-inch sections, incased in neat crates (which are new) with two glass sides—14 sections to the crate. Price 14c per lb. Extracted is A No. 1, put up in new 10 and 17 gallon pine kegs. Above is all in first-class condition in every respect, and ready to ship on receipt of orders. O. H. TOWNSEND,
Alamo, Kal. Co., Mich.

FOR SALE.—1000 lbs. white-clover honey, in 1-lb. sections, put on board cars here in nice glassed shipping-cases, for 15c per lb.; or if crates are returned free, 14c per lb. HERBERT G. GREEN,
Emerson, Mills Co., Iowa.

FOR SALE.—500 lbs. white-clover honey in 1-lb. sections, 48 secs. in a case, delivered on board cars here for 15c per lb., cases to be returned.
GEO. P. KIME, Evansburgh, Coshocton Co., Ohio.

WANTED.—About 200 lbs. of white-clover comb honey, and 500 lbs. of white-clover extracted honey; comb honey to be in single-tier crates holding 25 4¼ sections, and weighing not less than 24 lbs. net. Extracted, in double cans crated in box, such as Root sells. Send samples and state lowest cash price. G. WIEDERHOLD, Yonkers, N. Y.

FOR SALE.—California white-sage honey, 12000 lbs.; amber-colored, 2000 lbs. Sample on application. What am I offered on board cars at Los Angeles?
GEO. B. WOODBERRY, Verdugo, Cal.

FOR SALE.—1500 lbs. comb honey in 1½-lb. sec.; 1200 lbs. white clover at 12c.; and 300 dark at 10c., laid down here. JOHN CROMBIE, Columbus, Wis.

FOR SALE.—I have about 800 lbs. of extracted honey, clover, put up in tin cans of 64 lbs. each. I will take 8c per lb., can included, delivered on board cars at La Grange. B. B. WESLEY,
La Grange, Lorain Co., Ohio.

FOR SALE.—About 1200 lbs. of very choice white-clover honey, delivered on board cars at 13c per lb.; crates holding 36 sections each, all 1-lb. sections; crates thrown in. A. F. UNTERKIRCHER,
Manchester, Mich.

FOR SALE.—4500 lbs. choice white comb honey in 4¼×4¼ sections in new, bright, 24-lb. shipping-cases, glass fronts; 12c per lb., delivered at depot at Charles City, Iowa. C. A. SAYRE,
Sargent, Floyd Co., Iowa.

FOR SALE.—3000 lbs. choice white comb honey in fancy crates at 11c; also 7000 lbs. extracted clover and basswood, very thick, in tin cans of 175 lbs. each, at 7c; placed on cars in any quantity on receipt of price. OLIVER FOSTER, Mt. Vernon, Ia.

WANTED.—Extracted basswood honey.
J. G. LEHDE, Gardenville, Erie Co., N. Y.

WANTED.—I will pay 13c per lb. for 100 lbs. of nice comb honey in 1-lb. sections, put up in 24-lb. shipping-cases, delivered at Ridgefield, Conn.
W. S. GILBERT, Ridgefield, Conn.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is often times quite an accommodation to those who can not afford higher-priced ones.

Black and hybrid queens for sale now. Can ship upon receipt of order, and will guarantee safe arrival. Prices, black, 20 cts.; hybrid, 35 cts.
16-17-18 J. A. BUCKLEW, Clarks, Coshocton Co., O.

For sale, after Sept. 1, about a dozen black queens at 20c each, postpaid, some of which have mated with Italian drones. The above will be disposed of before the middle of the month.
R. KILBOURNE, JR., Clinton, Oneida Co., N. Y.

Six hybrids, at 25 cts. each; three are clipped.
C. G. FENN, Washington, Conn.

I have a few mismated Italian queens to dispose of at 35 cts. each, or 3 for $1.00. These queens are almost pure. GEO. W. BECKHAM,
Pleasant Hill, Lan. Co., S. C.

I have 6 hybrid queens for sale at the usual prices. GEO. D. RAUDENBUSH,
445 Chestnut St., Reading, Pa.

I have 15 black queens for sale at 20 cts. each.
R. B. BONEAR, Cherry Ridge, Wayne Co., Pa.

I shall have some 12 or 15 hybrid and black queens on hand during August that I will take 30 cts. each for, or 2 for 50 cts.; or if there is any one not really able to give that, and wants one, send me a cage with stamp and your address, and I will *give* you one; or I will give one as a premium to those who never took GLEANINGS who will send A. I. Root a dollar for GLEANINGS for one year. These offers are good as long as I have any queens on hand, for they must be disposed of.
C. M. HICKS, Fairview, Md.

WE have for sale 6 very good tested Italian queens (1 hybrid) at $1.00 each, or $6.00 for the 7. Hybrids, 35c. Send $1.02 to return your money if queens are sold before your order comes.
17tfdb MODEL B. HIVE CO., W. Phil'a, Pa.

Contents of this Number.

Banner Apiary	734	Ginger Ale	748
Bees, Profit in	720	Honey Column	722
Bees in Stove-pipe	744	Honey for Cookery	729
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CONVENTION NOTICES.

THE NORTH-AMERICAN BEE KEEPERS' SOCIETY.

The society will hold its 17th annual convention, Oct. 12, 13, and 14, 1886, at Indianapolis, Ind.

The meeting will be held in Pfafflin's Music Hall, 82 and 84 North Pennsylvania St., one of the most pleasantly situated halls in the city. Good ventilation, and plenty of light.

The society headquarters will be at the Occidental Hotel, corner of Washington and Illinois Sts., in the heart of the city, and but a short distance from the hall. The regular rates at this hotel are $3.00 per day. Special rates for those in attendance at the convention will be $1.50 per day.

The North-Western Bee-Keepers' Society, The Indiana State, The Eastern Indiana, with various county and joint societies, will meet in union with the N. A., making it one of the most formidable meetings of bee keepers ever held in this country. Every thing possible will be done to make the meeting pleasant and entertaining. A cordial invitation is extented to all.

The following is the programme:

FIRST DAY—TUESDAY.

Forenoon session, 10 A. M.—Convention called to order. Address of welcome by Gov. I. P. Gray. Response by the president, H. D. Cutting. Welcome to the city mayor, Caleb S. Denny. Thanks, Dr. C. C. Miller, president of the N. W. Society. Calling the roll of members of last year. Payment of annual dues. Reception of new members and distribution of badges, reports of secretary and treasurer. Announcements.

Afternoon session, 2 P. M., special business.—Annual address of the president; Bee Studies, by Prof. A. J. Cook, Agricultural College, Michigan; Apicultural Journalism, by John Aspinwall, Barrytown, N. Y.; Bee Literature, by Thomes G. Newman, Chicago, Ill.; The coming bee, what encouragement have we to work for her advent? by R. L. Taylor, Lapeer, Mich. Subject for discussion, Has Apis Americana been reached?

Evening session, 7:30 P. M.—Announcements. Miscellaneous business. Discussion of questions that may have accumulated during the day.

SECOND DAY—WEDNESDAY.

Morning session, 9 A. M.—Announcements. Communication. Call of N. W. Society to elect officers. Election of officers of Indiana State Society. Call to order, Rendering Comb into Beeswax, by C. P. Dadant, Hamilton, Ill.; Foul Brood, by A. J. King, New York. Selection of place for holding meeting in 1887. Election of officers.

Afternoon Session, 2 P. M.—Announcements. Miscellaneous business; Bee-keeping and Apiculture, by Prof. N. W. McLain, U. S. Apicultural Station, Aurora; Feeding Bees for Winter, by Jas. McNeill, Hudson, N. Y.; Wintering, by Dr. A. B. Mason, Wagon Works, Ohio; Subjects for discussion, Is the use of foundation necessary in modern bee culture? Are perforated honey-boards a success? Unassigned papers.

Evening session, 7:30 P. M.—Announcements. Miscellaneous business. Discussion of questions in question-box. Social communications.

THIRD DAY—THURSDAY.

Morning session, 9 A. M.—Announcements. Miscellaneous business. Communications. A Talk on Hives, by James Heddon, Dowagiac, Mich.; Reversible Hives and Frames, by J. E. Pond, Jr., North Attleboro, Mass.; Drones and Drone Comb, by W. Z. Hutchinson, Rogersville, Mich.; Reports of vice-presidents; Progress of Bee-keeping in Indiana, by Jonas Scholl, Lyons Station, Ind.

Afternoon session, 2 P. M.—Announcements. Miscellaneous business. Explanation of various articles on exhibition.

Many good things are yet to be added to the programme not sufficiently developed to give. FRANK L. DOUGHERTY.

The 4th annual meeting of the Progressive Bee-Keepers' Association will be held in the Town Hall at Bainbridge Center, O., on Thursday, Oct. 7, 1886. Parties wishing conveyance from Geauga-Lake Station, 3 miles distant, on the N. Y., P. & O. R. R., will please notify me so that arrangements can be made for the same. All interested are invited to come and bring their lunch-basket. MISS DEMA BENNETT, Sec.

Bedford, Cuyahoga Co., O.

The Sheboygan Co. Bee-Keepers' Association will hold its next meeting at Chandler's Hall, at the village of Sheboygan Falls, on Saturday, Oct. 16, at 10 A. M. MRS. H. HILLS.

Sheboygan Falls, Wis.

The Southern Ill. Bee-Keepers' Association will hold its next meeting at Benton, Franklin Co., Ill., Thursday, Oct. 21, 1886, at 10 A. M. F. H. KENNEDY, Sec.

The annual meeting of the Western Bee-keepers' Association will be held in Pythian Hall, corner of Main and 11th Streets, Kansas City, Mo., Oct. 27, 28, 29, 1886. P. BALDWIN, Sec.

The Illinois Central Bee-keepers' Association will hold its next meeting at Mt. Sterling, Ill., on Tuesday and Wednesday, Oct. 19 and 20. J. M. HAMBAUGH, Sec.

KIND WORDS FROM OUR CUSTOMERS.

I am glad to inform you that the tested Italian queens bought of you in July last have proved to be all that I could have expected. I have produced very fine three-banded workers.

Emmettsville, Ind. JACOB CAYLOR.

The untested queen received from you some time since proves to be a fine one, and very fertile. She produces fine 3-banded workers. The season is very poor in this section. Basswood has failed entirely. Clover yield was not large. Buckwheat promises well, but is not fully out yet. R. G. KLING.

Charleston Four Corners, N. Y.

HOW TO PUT ON THE ROUND LABELS.

The goods came to hand. Those round labels No. 17 are beauties, and the place to stick them is on the inside of the glass (I use them for comb honey), just so they will be in the center of the section. They make very nice combinations and they will never get soiled, and the commission men can't get them off nor scratch off the address. H. W. FUNK.

Bloomington, Ill., Sept. 4, 1886.

The imported queen you sent to replace the missing one arrived safely, and is now laying in a new colony. We are well pleased with her appearance, and she seems to be especially prolific. And we are also much pleased with the way you settled the matter in regard to the loss of the first queen. We can not say that we expected you to replace her at your own entire expense, but felt willing to leave the matter entirely in your hands, feeling satisfied that you would do the fair thing in the matter.

Pomeroy, O. S. A. DYKE & CO.

I can not send off my order without expressing briefly my gratitude for such a blessing as GLEANINGS is to us. Each year I have taken it contains at least 24 happy days—the days on which GLEANINGS comes; and whenever I write to distant friends I tell them of its merits. I have kept bees now just nine years, and I am quite sure that no one ever cared more for their bees than I do. I am ever so sorry to know that you have foul brood in your apiary; but I like the method you have taken for a cure—the furnace idea. W. S. POUDER.

Groesbeck, Ham. Co., O., Sept. 2, 1886.

ITALIAN QUEENS, tested, $1.00; hybrid, 3 for $1.00. N. ADAMS,
18 19-20d Sorrento, Orange Co., Florida.

FOR SALE CHEAP.

For $4.50 each I will sell 60 colonies of bees in splendie hives and in fine condition. I am compelled to move soon, and must sell a part of my fine apiary. For particulars, address
18d M. J. HARRIS, Clay City, Clay Co., Ill.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 3tfbd

Foundation - Mill For Sale.

One ten-inch Root comb-mill, second hand. The mill has, however, been completely fitted up, painted, and varnished, and is, to all appearances, both in looks and quality of work, equal to a new one. Price $15.00. The list price of a new mill of this kind is $20.00. **A. I. ROOT, Medina, O.**

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, 1910 Germantown Ave., Phil'a, Pa.; E. Kretchmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; D. A. Fuller, Cherry Valley, Ill.; Clark Johnson & Son, Covington, Kentucky; J. B. Mason & Sons, Mechanic Falls, Maine; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; J. A. Humason, Vienna, O.; G. L. Tinker, New Philadelphia, O., J. M. Shuck, Des Moines, Ia.; Aspinwall & Treadwell, Barrytown, N. Y.; Barton, Forsgard & Barnes, Waco, McLennan Co., Texas, W. E. Clark, Oriskany, N. Y., and numerous other dealers.

Write for *samples free*, and price list of supplies, accompanied with **150 Complimentary** and *unsolicited testimonials*, from as many bee-keepers, in 1883. *We guarantee every inch of our foundation equal to sample in every respect.*

CHAS. DADANT & SON,
3btfd **Hamilton, Hancock Co., Illinois.**

GOOD NEWS FOR DIXIE!

SIMPLICITY HIVES,

Sections, Extractors, Smokers, Separators, &c., of Root's Manufacture, Shipped from here at ROOT'S PRICES.

Also S. hives of Southern yellow pine, and Bee-Keepers' Supplies in general. *Price List Free.*

J. M. JENKINS, WETUMPKA, ALABAMA.
3-24db

PREPARE FOR WINTER.

We have unequaled facilities for manufacturing the Root chaff hive at a great reduction from ruling prices. Mr. Zeno Doty, Grafton, Neb., writes July 9th, "Your material, make, and price is far better than I can get anywhere else." Send for price list and special prices for this fall. 16tfdb

A. F. STAUFFER & CO., Sterling, Ills.

GERMAN CARP FOR SALE.

SPAWNERS AND SPRING HATCH.

Correspondence Solicited. Address 17-18d
DR. S. E. ADAMS, Spring Hill Park, Peoria, Ill.

2 H. P. ENGINE FOR SALE.

We have at the factory in Elmira, N. Y., a 2 H. P. engine and boiler that has been rigged up exactly as good as new in every respect. It ought to bring full price of a new one, but in order to get it off our hands we offer it for $150.00.

A. I. ROOT, Medina, O.

DISSOLUTION NOTICE.

Notice is hereby given, that the partnership heretofore existing between E. M. Kennedy and R. B. Leahy, manufacturers of and dealers in apiarian supplies, has been this day, by mutual consent, dissolved, E. M. Kennedy retiring. All liabilities of the firm are payable by R. B. Leahy, and all bills due the firm are payable to R. B. Leahy, who now owns and controls the business.

ELI M. KENNEDY.
R. B. LEAHY.

Higginsville, Mo., Aug. 25, 1886.

FIRST IN THE FIELD!!

The Invertible Bee-Hive

Invertible Frames,

INVERTIBLE SURPLUS - CASES,

TOP, BOTTOM, AND

ENTRANCE FEEDERS.

Catalogues Free. Address

J. M. SHUCK, DES MOINES, IOWA.
4-3db

THE CANADIAN BEE JOURNAL.

WEEKLY, $1.00 PER YEAR.

JONES, McPHERSON & CO., Publishers, Beeton, Ontario, Canada.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 9tfb

100 FINE PRINTED ENVELOPES,

white, or assorted colors, with name, business, and address on, all for 40 c.; 50 for 25 cts. By mail postpaid. Cards and letter-heads at same prices.
17 22db Address G. F. ROBB, Gilman, Iowa.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.
2tfdb JNO. VANDERVORT, Laceyville, Pa.

SURE TO SEND

FOR MY NEW

PRICE LIST FOR 1886,

Before purchasing your **Bee-Supplies.** Cash paid for Beeswax. 7tfdb

A. B. HOWE, Council Bluffs, Ia.

MUTH'S HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

PERFECTION COLD-BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,
CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 1tfdb

FOR SALE. PURE ITALIAN Bees & Queens.

Untested queen, $1.00; two or more, 75 cts. each. Tested queens, $2.00 each. Full colonies, in Simplicity hive, with tested queen, from $4.00 to $10.00. Three-frame nuclei, with untested queens, $2.00; with tested, $3.00. For July, August, September, and October, address or call on

Residence, Little Muskingum, BENJ. J. COLE,
16-20db Marietta, Wash. Co., O.

BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN** Before purchasing elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary, **SUPPLIES**

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

2 1fd **Hartford, Washington Co., Wis.**

WARRANTED Italian queens at 60 cents each. They are young, and are now ready to ship.
J. H. JOHNSON, Middaghs, Northamp. Co., Pa.

GOODS NEAR YOUR HOME, AT A REDUCTION FROM REGULAR PRICE.

We have the following lot of goods at the places named, for which we want customers. Now, it is altogether likely that there is some one located not very far from where these goods are who will be needing just such articles, especially if he can get them a little lower than the regular price, and doesn't have to pay much freight charges on them. In hopes that there are such persons, we append a list of the articles for sale, giving the present value of the goods and the amount we will take for each lot entire. We give a number to each lot, and the name of the place where they are being held, subject to our order. Remember they are all perfect goods, just as fresh and new as if shipped from here. Remember, also, that at the price we offer them we can not break lots; each lot must go entire. In making your orders, please give the number of the lot as well as the articles contained in it, and thus help us to avoid mistakes.

No. 1. Aplington, Iowa.
Ten 2-story portico hives, complete, in flat, for comb honey, including m. c. frames, wide frames, sections, separators, thin fdn. for sec., 7 lbs. brood fdn., and enamel sheets. The lot foots up to $25 30. We will sell it complete for..... $22.00

No. 2. Union City, Ind.
13 combined shipping and honey crates flat; 90 tin separators for above crates; 26 pieces glass for above crates; 40 metal-cornered brood-frames in flat. Present value, $4.50; will sell for..... 4 00

No. 5. St. Paul, Mo.
22 48-lb. shipping and retailing cases, in flat, without glass. Worth $3.96; will sell at..... 3 75

No. 7. Nassau, N. Y.
200 wide frames, for 8 1-lb. sections, in flat. Worth $4.00; will sell for..... 3.75

No. 8. Riverside, N. J.
500 1-lb. 7-to-foot sections. Worth $2 00; will sell for .. 1 75

No. 9. North Walton, N. Y.
100 metal-cornered frames, in flat. Present value, $2.50; will sell for..... 2 50

No. 12. Caribou, Maine.
900 sections, 4½ x 5 x 1 7 16 w de, open on all four sides. Present value, $4.50; will sell for..... 3.50

No. 13. Canal Fulton, Ohio.
Eight chaff hives, complete, for comb honey, in the flat. Present value $21.00; will sell for..... 2.20

No. 14. Delaware, Ohio.
35 bottom-boards for Simp. hives; 210 tin separators for combined crates. Present value, $8.75; will sell for..... 7.50

No. 15. Foster Brook, Pa.
100 wired m. c. brood-frames, in flat, including wire and tin bars. Present value, $3. 00; will sell for..... 2.75

No. 16. Johnson City, Tenn.
One No. 7 honey-extractor, with basket, only 15 in. deep. Present price, $8.00; will sell for..... 6.00

No. 17. Cairo, W. Va.
One 2 story Simp. hive, rigged complete for comb honey, and 5 lbs. fdn., ½ thin, for sections, and ½ for L. frames. Present value, $5.25; will sell for..... 4.75

No. 18. Elmira, N. Y.
One 2-H. P. engine and boiler complete. This has been used some, but has been put in as good shape as when new. Price of a new one, $175.00; will sell this for..... $150.00

No. 19. La Salle, Ill.
6-in. foundation mill. Present value $13.50; will sell for..... 11.50

No. 20. Glenville, Conn.
15 24-lb. single-tier shipping-cases in the flat, with 30 pieces of glass for same. Present value $2.60; will sell the same for..... 2.25

A. I. ROOT, Medina, Ohio.

HELP! HELP! HELP!

Me develop my honey-trade in Philadelphia by consigning me your honey. Those I have sold for, express satisfaction.

TODD'S HONEY CANDIES

Sample package mailed on receipt of 25 cts. Special rates for quantities for fairs.
1618db ARTHUR TODD, 1010 Germantown Ave., Philadelphia, Pa.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfd

RED-CLOVER ITALIANS.

During the season just passed, Moore's Italians have roared away on red clover, in countless thousands. Reduced prices: Warranted queens, each, 80 cts.; per ½ doz., $4.50. Tested queens, $1.25. Safe arrival and satisfaction guaranteed. Circular free. 15tfdb J. P. MOORE, MORGAN, PENDLETON CO., KY.

THE AMERICAN APICULTURIST

Sent one year, and a tested Italian queen, to each subscriber; all for $1.50. Sample copies free.
15tfdb Address HENRY ALLEY, Wenham, Mass.

PURE ITALIAN QUEENS.

Tested queens, $1.50 each; untested, 70c each; 3 for $2 00; 5 for $3.00. All bred from a select imported mother. By return mail.
15tfdb D. G. EDMISTON, ADRIAN, LEN. CO., MICH

ATTENTION, BEE-KEEPERS!

Now is the time to Italianize cheap. Having all my orders filled to-date, I will sell fine queens, from my well known strains, at the following very low rates.

1 queen, - - -	$ .80	1 tested queen, - -	$1.50
6 " - - -	4.50	6 " " - - -	8.00
12 " - - -	8.00	1 select tested queen,	2 00

Safe arrival of all queens guaranteed, and queens sent by return mail. Address
16tfdb **WM. W. CARY, COLERAINE, MASS.**

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,
22 21db **Box 172. Fresno City, Cal.**

CHEAP!

Full colonies in Simplicity hives, and honey enough to winter, for only $4.50. *Will ship last of July.*
DAN WHITE,
11tfdb NEW LONDON, HURON CO., OHIO.

HOW TO RAISE COMB HONEY.

Price 5c. You need this pamphlet, and my free bee and supply circular. 18tfdb
OLIVER FOSTER, Mt. Vernon, Linn Co., Iowa.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3btfd

WE have for sale 6 very good tested Italian queens (1 hybrid) at $1.00 each, or $6.00 for the 7. Hybrids, 35c. Send $1.02 to return your money if queens are sold before your order comes.
7tfdb MODEL B. HIVE CO., W. Phil'a, Pa.

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey.*—The season for the new crop of comb honey is just opening. We note an improvement in sales and prices. Most of the comb which we have seen is badly colored, which makes it second grade, which we suppose is due to a poor season and long finishing. We quote 1886 crop as follows:

Fancy white 1-lb. sect's, clean and neat p'k'gs.	15@16
" " 2 " " " " " "	12@13
Fair to good 1 " " " - - - - -	12@14
" " " 2 " " " - - - -	10@11
Fancy Buckwheat 1-lb. sections, clean - -	11@12
" " 2 " " " - -	9@10
White Clover, extracted, kegs and small bbls.	6½@7
California extracted, 60-lb. cans, per pound,	5@5½
California Comb - - - - - -	10@11
Beeswax, prime yellow - - - - - -	22@24

McCAUL & HILDRETH BROS.,
Sept. 2, 1886. 34 Hudson St., Cor. Duane St.

CINCINNATI.—*Honey.*—The market for honey is very tame. Demand from manufacturers is slow, and there is only a fair trade in new comb honey, and extracted honey in square glass jars. Extracted honey brings 3½@7c. per lb. on arrival. Comb honey brings 12@14 for good to choice in the jobbing way. Prices are low for all produce, and no speculative feeling is noticed anywhere. Unless better prices are realized for other produce, prices of honey are not likely to advance. *Beeswax* is in good demand, and arrivals are fair. We pay 20c. per lb. for good yellow. CHAS. F. MUTH & SON,
Sept. 2, 1886. S. E. cor. Freeman and Central ave.

KANSAS CITY.—*Honey.*—Extracted is arriving more freely. Extracted white clover, 6½ @ 7½. Other grades the same.
Sept. 10, 1886. CLEMONS, CLOON & CO.,
Cor. 4th and Walnut St's, Kansas City, Mo.

DETROIT.—*Honey.*—No change in the honey market since last quotations. There is sufficient in the commission houses to supply the demand. Best white in 1-pound sections, 14 cts. *Beeswax*, 23 cts.
M. H. HUNT, Bell Branch, Mich.
Sept. 10, 1886.

BOSTON.—*Honey.*—New honey is coming in, and selling fairly well, but the recent hot wave has checked it some. We have heard from most of the bee-keepers of Addison Co., Vt., and there will not be over half a crop there. We are selling one-pound white honey at 14@15c.; two pounds, 13@14.
Sept. 10, 1886. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

CHICAGO.—*Honey.*—Honey is without change from last quotations. Weather continues warm.
Sept. 10, 1886. R. A. BURNETT,
161 So. Water St., Chicago, Ill.

MILWAUKEE.—*Honey.*—Market remains about the same as when last reported; may be quoted little lower to sell.

Choice white comb, 1-pound sections - -	12@13
" " " 2 " " - -	11@12
Extracted white, in kegs - - - - - -	6@6½
" " " tin - - - - - -	6½@7
" dark " barrels - - - - -	5@5½

Beeswax, no demand. A. V. BISHOP,
Sept. 10, 1886. 142 W. Water St.

ST. LOUIS.—*Honey.*—Comb honey is in good demand for choice white-clover in sections, 1-lb., 12@12½; other varieties, 10@11½. Extracted honey very dull; cans, 5@7 for choice in a small way. On large lots, 5@5½ are as much as would bring. Old honey in cans 4@5c. Southern honey in bbls., good to choice, 3½@4; extra, 4½c. *Beeswax*, mixed lots, 22c.; selected yellow, 25c. WESTCOTT & HALL,
Sept. 10, 1886. 108 and 110 Market Street.

CHEAP HONEY.—I have about 350 lbs. of honey in nice 22-gallon kegs. It is dark, but very thick, and is splendid bee-feed, or good for factory-men. I have to move soon, and must sell it. You may have it for 3 cts. per pound, by the keg of 250 lbs., at depot here. M. J. HARRIS,
Clay City, Clay Co., Ill.

FOR SALE.—7000 lbs. extracted honey of the best quality, part pure white clover, part white clover slightly mixed with basswood, put up in new oak parffined barrels holding about 500 lbs., at 7c. per pound, delivered on cars here, packages free.
RUFUS PORTER, Lewistown, Ill.

WANTED.—I want 100 lbs. of white extracted honey. What will you charge me for it, laid down at my depot at Rogersville, Mo.? I may want more.
S. S. LAWING, Henderson, Mo.

Ten bbls. of nice thick honey, 52 gallons each, for $35.00 per bbl., delivered on board boat at Gaines' Landing, Ark. Sample sent free on application.
W. G. MCLENDON, Gaines' Landing, Ark.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ad's intended for this department must not exceed 5 lines, and you must SAY you want your ad. in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates.

WANTED.—To exchange for comb or extracted honey, cash or offers, 15,000 pot-grown strawberry plants of the best varieties; also game cocks. Can give best reference. GEO. M. WERTZ,
15tfdb Johnstown, Cambria Co., Pa.

FOR SALE.—A two-story brick house, with five lots, good barn, ice-house with cooling-room, bee-house, honey-house, wood-house, etc. Grapes, berries, apples, and cherries on the place; in small town, location suitable for bee or chicken business. Will sell cheap for cash, or exchange.
15-18db ANABEL RONALD, Grand View, Iowa.

WANTED.—To buy a farm and apiary. Give honey resources, and distance to school, church, and R. R. station. Address E. S. ARWINE,
17-18d Patterson, Waller Co., Tex.

WANTED.—To exchange 10,000 Cuthbert raspberry roots, for beeswax, or L. foundation.
17-19db M. ISBELL, Norwich, Chenango Co., N.Y.

WANTED.—To sell, or exchange for a small farm, my village home, consisting of 2 lots, a 2-story frame dwelling, a 2-story frame wagon-shop; also 46 colonies of bees. For particulars address
17tfdb M. LUDTMAN, Hannibal, Monroe Co., Ohio.

WANTED.—Beeswax. Any amount of average beeswax, at 22 cts., cash on delivery.
E. T. LEWIS & CO., Toledo, O.
17tfdb Apiarian Supply Dealers.

ITALIAN QUEENS.—Select tested, $1.00; second grade, 90c; third grade, 80c; untested and unwarranted, 60c, or $6.00 per dozen. 17-18-19d
DR. JOHN M. PRICE, Tampa, Hillsboro Co., Fla.

WANTED.—To sell one Pacific incubator and brooder, capacity 200; has been used once only, and is good as new; cost $65.00. Will sell cheap, or exchange in part for Detective camera. Make me an offer. L. HEINE,
18d Bellmore, Queens Co., N. Y.

WILL sell for $25.00 cash a Zimmerman dryer and baker, used one season. Cost $50.00; or exchange for good section comb honey or offers; also fine-bred poultry and ducks to sell or exchange.
J. T. FLETCHER, Prop.,
18d Model Poultry & Bee Yards, Clarion, Pa.

WANTED.—To exchange music-box and opera-glass for Italian bees. THOS. DREW,
Box 69, South Hanover, Mass.

THOROUGHBRED fowls, Brown Leghorns, S. S. Hamburgs, W. C. B. Polish, P. Rocks and Wyandottes, Bonney's, Forbes', Hawkins', Wilcox & Fultz' strains. We will sell for cash, or exchange for fdn. and beeswax. Price list free.
18-19tfd A. H. DUFF, Creighton, Ohio.